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Letter dated 27 January 2016 from the Secretary-General addressed to the President of the Security Council

I have the honour to transmit herewith the twenty-eighth monthly report of the Director General of the Organization for the Prohibition of Chemical Weapons (OPCW), submitted pursuant to paragraph 12 of Security Council resolution 2118 (2013) (see annex). The present report covers the period from 22 December 2015 to 22 January 2016.

With respect to the destruction of chemical weapons production facilities, the status as of December 2015 remains unchanged, with one hangar yet to be destroyed. This is due to its continued inaccessibility as a result of the prevailing security situation. I take note of the note by the Director General to the OPCW Executive Council (enclosure I), in which he provides an overview of the status of all 27 chemical weapons production facilities that have been declared by the Syrian Arab Republic since the time of its accession to the Chemical Weapons Convention.

Since my last letter, dated 29 December 2015 (S/2015/1049), the destruction of all chemicals declared by the Syrian Arab Republic has been completed. I welcome this important milestone towards the full implementation of resolution 2118 (2013).

As of the end of this reporting period, the OPCW Declaration Assessment Team was deployed for its fourteenth visit to the Syrian Arab Republic. I take note of the reference by the Director General, in his note to the Executive Council, of the briefing that was given by the Team to the States parties to the Chemical Weapons Convention on 14 January 2016 and of the potential new issues raised by the Team.

In accordance with the decision of the OPCW Executive Council of 4 February 2015, the OPCW Director General transmitted the most recent report of the OPCW fact-finding mission on 25 January 2016, and it is attached herewith (enclosure II). I note that, in view of its recommendation of further investigation, the fact-finding mission will shortly be conducting a mission to the Syrian Arab Republic to take forward its enquiry.

Pursuant to resolution 2235 (2015), the first report of the OPCW-United Nations Joint Investigative Mechanism is expected 90 days after my announcement that the Mechanism is fully operational, which happened on 13 November 2015. I understand that the first report will be submitted on 12 February 2016, after which the Security Council will take it up for consideration.

(*Signed*) **BAN** Ki-moon

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Annex

[Original: Arabic, Chinese, English, French, Russian and Spanish]

I have the honour to transmit to you my report entitled "Progress in the elimination of the Syrian chemical weapons programme" prepared in accordance with the relevant provisions of OPCW Executive Council decision EC-M-33/DEC.1, and Security Council resolution 2118 (2013), both dated 27 September 2013, for transmission to the Security Council. My report covers the period from 22 December 2015 to 22 January 2016 and also covers the reporting requirements of Executive Council decision EC-M-34/DEC.1, dated 15 November 2013. Please also find attached the bravo report of the Fact-Finding Mission.

(*Signed*) Ahmet **Üzümcü**

Enclosure I

[Original: Arabic, Chinese, English, French, Russian and Spanish]

Note by the Director General of the Organization for the Prohibition of Chemical Weapons

Progress in the elimination of the Syrian chemical weapons programme

1. In accordance with subparagraph 2 (f) of the decision by the Executive Council (hereinafter "the Council") at its Thirty-Third Meeting (EC-M-33/DEC.1, dated 27 September 2013), the Technical Secretariat (hereinafter "the Secretariat") is to report to the Council on a monthly basis regarding the implementation of that decision. In accordance with paragraph 12 of United Nations Security Council resolution 2118 (2013), the report by the Secretariat is also to be submitted to the Security Council through the Secretary-General.

2. The Council, at its Thirty-Fourth Meeting, adopted a decision entitled "Detailed Requirements for the Destruction of Syrian Chemical Weapons and Syrian Chemical Weapons Production Facilities" (EC-M-34/DEC.1, dated 15 November 2013). In paragraph 22 of that decision, the Council decided that the Secretariat should report on its implementation "in conjunction with its reporting required by subparagraph 2(f) of Council decision EC-M-33/DEC.1".

3. The Council, at its Forty-Eighth Meeting, also adopted a decision entitled "Reports of the OPCW Fact-Finding Mission in Syria" (EC-M-48/DEC.1, dated 4 February 2015).

4. This, the twenty-eighth monthly report, is therefore submitted in accordance with the aforementioned Council decisions, and includes information relevant to the period from 22 December 2015 to 22 January 2016.

Progress achieved by the Syrian Arab Republic in meeting the requirements of EC-M-33/DEC.1 and EC-M-34/DEC.1

5. Progress by the Syrian Arab Republic is as follows:

(a) In terms of the 27 chemical weapons production facilities (CWPFs) declared by the Syrian Arab Republic, significant progress has been made with their destruction. The focus on the destruction of the 12 robustly constructed CWPFs (five underground structures and seven reinforced aircraft hangars), which was a complex undertaking requiring explosives for the hangars, and mechanical works, has resulted in only one hangar still to be destroyed. As mentioned in previous reports, the Secretariat has also verified the destruction of eight mobile units, which were used for mixing and filling chemicals into warheads, and five other stationary above-ground facilities. Within the reporting period, the security situation continued to preclude safe access to the aforementioned hangar to be destroyed. Also, as the locations of the two other stationary above-ground facilities remain outside the control of the Syrian Government, their condition cannot be confirmed at this time. Taken together, of the 27 CWPFs declared by the Syrian Arab Republic, the Secretariat has verified the destruction of 24, and three remain to be verified as destroyed.

(b) On 15 January 2016, the Syrian Arab Republic submitted to the Council its twenty-sixth monthly report (EC-81/P/NAT.4, dated 15 January 2016) regarding activities on its territory related to the destruction of its CWPFs, as required by paragraph 19 of EC-M-34/DEC.1.

(c) The Syrian authorities have continued to extend the necessary cooperation in accordance with the implementation of subparagraph 1(e) of EC-M-33/DEC.1 and paragraph 7 of United Nations Security Council resolution 2118 (2013).

Progress in the elimination of Syrian chemical weapons by States Parties hosting destruction activities

6. With the complete disposal of the remaining Category 2 chemical, hydrogen fluoride, by Veolia ES Technical Solutions LLC in the United States of America at the end of 2015, all the chemicals declared by the Syrian Arab Republic that were removed from its territory in 2014 have now been destroyed.

Activities carried out by the Secretariat with respect to the Syrian Arab Republic

7. The Secretariat and the United Nations Office for Project Services continued their cooperation in the context of the OPCW Mission in the Syrian Arab Republic. Nine OPCW staff members were deployed as part of that mission as at the cut-off date of this report (this includes the Declaration Assessment Team (DAT)).

8. During the reporting period, the Syrian Arab Republic and the OPCW finalised their modalities of cooperation for ensuring the security of the remote monitoring systems installed at four of the CWPFs already destroyed (the four underground structures).

9. The Director-General has continued to communicate with senior officials of the Government of the Syrian Arab Republic. As requested by the Council at its Seventy-Fifth Session (paragraph 7.12 of EC-75/2, dated 7 March 2014), the Secretariat, on behalf of the Director-General, has continued to brief States Parties in The Hague on its activities.

10. The Secretariat and the Syrian authorities have maintained their ongoing cooperation on outstanding issues regarding the Syrian initial declaration, as encouraged by the Council at its Seventy-Sixth Session (paragraph 6.17 of EC-76/6, dated 11 July 2014). On 14 January 2016, the DAT briefed States Parties on the details of its thirteenth visit to the Syrian Arab Republic (which occurred from 13 to 22 December 2015), the observations made during that visit, and on the provisional analytical results of the samples taken during the DAT's eleventh and twelfth visits, as they have the potential to raise new issues.

11. The DAT, on its fourteenth visit (beginning on 18 January 2016), discussed the aforementioned provisional analytical results and observations with the Syrian authorities. The DAT has also continued to pursue the outstanding issues, bearing in mind the Council's request at its Eightieth Session in October 2015 that the Director General report to it, before its Eighty-First Session (in March 2016), the details of all unresolved issues, in particular those for which no further progress can be made. The DAT's fourteenth visit is expected to be completed in the last week of January 2016.

Supplementary resources

12. As at the cut-off date of this report, the Trust Fund for Syria Missions, which was established in November 2015 to support the Fact-Finding Mission (FFM) and other remaining activities, such as those of the DAT, had a balance of EUR 1 million. Contribution agreements have been concluded with Finland, France, Germany, Switzerland, and the European Union. Pledges from other donors are currently being processed.

Activities carried out with respect to the OPCW Fact-Finding Mission in Syria

13. As mentioned in the last monthly report, the FFM had in the course of its recent work come across indications from blood samples that certain individuals were at some point exposed to sarin or a sarin-like substance. It was also mentioned that further investigations would be necessary to determine when or under what circumstances such exposure might have occurred. Accordingly, the FFM is expected to soon conduct a mission to the Syrian Arab Republic to take forward its enquiry into this matter.

14. The Secretariat continues to offer its assistance and to work with the Joint Investigative Mechanism through the OPCW FFM.

Conclusion

15. The main focus of the future activities of the OPCW Mission in the Syrian Arab Republic will be on the DAT and FFM activities, as well as the destruction and verification of the remaining aircraft hangar.

Enclosure II

[Original: Arabic, Chinese, English, French, Russian and Spanish]

Note by the Technical Secretariat of the Organization for the Prohibition of Chemical Weapons

Report of the OPCW Fact-Finding Mission in Syria regarding the incidents described in communications from the Deputy Minister for Foreign Affairs and Expatriates and the Head of the National Authority of the Syrian Arab Republic

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1. EXECUTIVE SUMMARY

1.1 At its Forty-Eighth Meeting, the OPCW Executive Council adopted a decision entitled "Reports of the OPCW Fact-Finding Mission in Syria" (EC-M-48/DEC.1, dated 4 February 2015) in which, inter alia, it requested the Director-General to provide information on the progress of the Fact-Finding Mission ("FFM") and specific plans, schedules and their implementation to the Council at its next regular session. In response to this request, the Technical Secretariat ("Secretariat") submitted a Note to address the future activities of the OPCW FFM (S/1255/2015, dated 10 March 2015).

1.2 The Secretariat received a note verbale from the Syrian Arab Republic (Note Verbale 150) providing information about incidents involving the alleged use of chemicals as a weapon, particularly chlorine. In addition, the Permanent Representation of the Syrian Arab Republic later submitted Notes Verbales 41, 43, and 47 detailing other incidents that potentially involved the use of chemicals as a weapon. In total, the notes referred to 26 incidents and 432 casualties.

1.3 Due to the seriousness of the allegations, the Director-General dispatched an OPCW team to collect the facts pertinent to the alleged chemical incidents as reported in the referenced notes verbales. The FFM deployed on 1 June, 1 August, and 13 October 2015. The team was composed of OPCW inspectors, consulting medical doctors, and interpreters. During the deployment, the FFM conducted its investigation by collecting testimonies, reviewing documents and information, and analysing blood samples provided by the Syrian national authorities, and by visiting certain locations deemed of interest in the Damascus area. In total, the team conducted approximately 75 interviews in relation to 6 incidents.

1.4 Through the evidence presented by the Syrian National Authority, the medical records reviewed, the prevailing narrative of all interviews, and secondary evidence analysis, the FFM cannot confidently determine whether or not a chemical was used as a weapon in any of the alleged incidents listed in paragraph 3.38 of this report.

1.5 From the results of blood sample analyses, the FFM is of the opinion that there is a high degree of probability that some of those identified as being involved in the alleged incident in Darayya on 15 February 2015 were at some point exposed to sarin or a sarin-like substance. In order to determine how, when, or under what circumstances the exposure occurred, further investigation would be required to complement the interviews carried out and the documents reviewed.

1.6 Regarding the other incidents (listed in paragraphs 3.38 and 3.40 of this report), the FFM is of the view that those affected in the alleged incidents may have, in some instances, been exposed to some type of non-persistent, irritating substance. The FFM is of the opinion that it would have been able to more definitively establish facts in relation to these incidents, had it been able to obtain complementing evidence.

2. THE FACT-FINDING MISSION: BACKGROUND INFORMATION

2.1 At its Forty-Eighth Meeting, the OPCW Executive Council adopted a decision entitled "Reports of the OPCW Fact-Finding Mission in Syria" (EC-M-48/DEC.1, dated 4 February 2015) in which, inter alia, it requested the Director-General General to provide information on the progress of the FFM and specific plans, schedules and their implementation to the Council at its next regular session.

2.2 In response to this request, the Secretariat submitted a Note to address the future activities of the FFM (S/1255/2015, dated 10 March 2015). This Note stated that the Secretariat received a note verbale from the Syrian Arab Republic (reference number 150, dated 15 December 2014, hereinafter "Note Verbale 150") providing information about incidents involving the possible use of chemicals as a weapon, particularly chlorine.

2.3 Note Verbale 150 contained a report by the Military Medical Services of the General Command of the Army and the Armed Forces of the Syrian Arab Republic providing information on cases of injuries sustained by soldiers of the Syrian Arab Republic in a number of locations as a result of the use of chlorine by opposition groups. The report listed chemical incidents, with the locations of described instances of exposure, casualty names, ranks, duty stations, reported symptoms, medical assistance received, and conditions after discharge. The table below summarises the data contained in the medical report.

TABLE 1: SUMMARY OF THE ALLEGED INCIDENTS IN NOTE VERBALE 150

No.	Date	Location	Number of Casualties	Type of Casualty
1.	16/04/2014	Al-Maliha	5	Military personnel
2.	16/04/2014	Jober	10	Military personnel
3.	02/07/2014	Al-Maliha	5	Military personnel
4.	08/07/2014	Al-Maliha	7	Military personnel
5.	11/07/2014	Al-Maliha	6	Military personnel
6.	15/08/2014	Darayya	8	Military personnel
7.	29/08/2014	Jober	33	Military personnel
8.	04/09/2014	Jober	5	Military personnel
9.	10/09/2014	Al-Kabbas	6	Military personnel
10.	18/09/2014	Al-Kabbas	7	Military personnel
Total	**10 separate incidents**	**4 locations (neighbourhoods in the Damascus area)**	**92 casualties**	**Military personnel**

2.4 In addition, Note Verbale 150 made reference to an attack where it is alleged that toxic gases were employed against Syrian Arab Army soldiers on 22 December 2012. According to the note verbale, seven fatalities occurred as a result of exposure to a yellow gas. These fatalities happened within one hour of exposure.

2.5 Upon receipt of Note Verbale 150, and due to the severity of the allegations, the Director-General decided to dispatch a team to the Syrian Arab Republic to collect the facts pertinent to incidents as reported in Note Verbale 150. Correspondence between the Director-General and the Syrian Arab Republic followed, addressing the launch of an FFM. Requests for clarification made by the Syrian Arab Republic in this regard were responded to.

2.6 The Terms of Reference for the OPCW FFM in Syria were agreed upon through correspondence (S/1255/2015, dated 10 March 2015). Further correspondence between the Director-General and the authorities of the Syrian Arab Republic took place between March and April 2015 in order to clarify points about the future work of the FFM and its terms of reference.

3. THE FACT-FINDING MISSION: PRE-DEPLOYMENT PHASE

3.1 The Director-General appointed the mission leader for the FFM on 24 March 2015. Next, a team of inspectors was selected based not only on professional background, technical expertise, and skills, but also with due regard for the geographic distribution of nationalities of the team's membership. Once the team was assembled, preparations for deployment commenced. These preparations included logistics, administration, security assessments, health and safety, and operational planning. Additionally, the team underwent a number of training sessions to refresh knowledge and practice on topics such as conducting interviews, forensic techniques, confidentiality procedures, and explosive remnants of war.

3.2 Correspondence between the Syrian Arab Republic and the Secretariat took place in April and May 2015. In these letters, the Secretariat detailed the team membership, made a request for the deployment of an Advance Team to liaise with the relevant authorities of the Syrian Arab Republic, and submitted a preliminary list of requests for information and services to be provided to the FFM in Damascus. Among other things, these requests addressed initial requirements deemed appropriate by the FFM for its investigation and were subject to possible changes during the FFM.

3.3 A list of requests for information and services to be provided by the authorities of the Syrian Arab Republic to the FFM was sent in correspondence (L/ODG/198036/15, dated 21 May 2015). The list made reference to the incidents involving the alleged use of chemical weapons described in Note Verbale 150. This list is detailed in Table 3 of this report.

3.4 The Syrian Arab Republic sent a reply to the Secretariat on 21 May 2015, in which it welcomed the deployment of the FFM to Syria, despite providing some suggested changes to the previously agreed terms of reference (Note Verbale 37). This was followed by a series of

meetings in The Hague and Damascus. Once negotiations and requests for clarification were concluded, the FFM received authorisation to deploy.

3.5 It was agreed that an Advance Team would arrive in the Syrian Arab Republic on 25 May 2015, whilst the main body of the FFM would arrive on 1 June 2015. The purpose of the Advance Team was to meet with the relevant authorities from the Syrian Arab Republic in Damascus in order to discuss how to best proceed with the FFM's work. The main body of the team would then carry out the bulk of investigative activities upon arrival.

FIRST DEPLOYMENT

Advance Team Activities

3.6 The Advance Team was comprised of the mission team leader and three team members who carried out the described preparatory activities from 25 May 2015 to 29 May 2015. The Advance Team provided a copy of its mandate (in English and Arabic) to the authorities of the Syrian Arab Republic at their first meeting and continued to finalise operational details during follow-up meetings over subsequent days.

3.7 A series of meetings with the authorities of the Syrian Arab Republic took place on the following days. During these meetings, the Advance Team offered explanations to the authorities of the Syrian Arab Republic on the methodology intended to be used by the FFM. The methodology would include interviews, the review of records and evidence (as per the request sent in correspondence L/ODG/198036/15, dated 21 May 2015), and potential field visits. These field visits would only be performed if deemed necessary and safe. The FFM Advance Team offered clarification on the aforementioned list of records required for the investigation. The necessary arrangements for the interviews were also discussed, such as the number of interviews per day, locations, and potential interviewees.

3.8 The Advance Team indicated that the FFM should maintain full discretion over the selection of potential interviewees. The authorities of the Syrian Arab Republic replied that such unhindered access would not be possible due to operational conflict-related constraints affecting, among other things, transport and security. With regard to these constraints, an agreement was reached between the authorities of the Syrian Arab Republic and the FFM to focus initially on the incident reported to have taken place on 29 August 2014 in Jober. The fact that this particular event involved the highest number of casualties from among all of the incidents described in Note Verbale 150 served as the basis for this agreement. Accordingly, the authorities of the Syrian Arab Republic proposed to make relevant witnesses available to the FFM. The witnesses included casualties, first responders, ambulance drivers, and medical personnel involved in the incident.

3.9 The FFM requested a visit to Martyr Youssef Al-Adhma Hospital (hereinafter "Hospital 601"), which was described in Note Verbale 150 as the location where the casualties of the incidents were treated. This facility, located in the western part of Damascus, provides treatment for military and civilian personnel.

3.10 Apart from possibly identifying suitable witnesses from amongst the staff and patient registers, the FFM aimed to learn about the hospital facilities and record-keeping systems. Additionally, the FFM aimed to obtain information on the medical treatment provided to the alleged victims and determine the availability of biomedical samples.

3.11 During the visit to Hospital 601 on 27 May 2015, the FFM received a tour of hospital facilities. This tour included the ambulance entrance area, an external decontamination area equipped with showers, the triage area, the entrance to the emergency department, resuscitation room, and a typical multi-bed ward room. The team was provided with a sample of patient logs kept by the hospital, including a log-book of clinical admissions making mention of patients listed in Note Verbale 150. Furthermore, the hospital liaison officer gave verbal confirmation to the FFM that all patients associated with Note Verbale 150 were treated there.

3.12 At the end of the visit, the Advance Team indicated which hospital records it would like to review and identified potential hospital staff to be interviewed as witnesses to the incidents. The list of additional records requested from the authorities of the Syrian Arab Republic can be found in Table 4 of this report.

3.13 During the initial meetings with the FFM Advance Team, the authorities of the Syrian Arab Republic indicated that there had been other relevant incidents that were not included in Note Verbale 150. The team received a copy of correspondence sent by the Syrian Arab Republic to the Director-General and the Secretariat (Note Verbale 41, dated 29 May 2015), where details of reported incidents involving chlorine were provided. The authorities of the Syrian Arab Republic requested that these incidents be included in the scope of the FFM. However, the team indicated that a new mandate including these new allegations would have to be issued for this purpose. In addition to Note Verbale 41, the Syrian Arab Republic submitted Note Verbale 43 (dated 3 June 2015) and Note Verbale 47 (dated 15 June 2015) to the Secretariat detailing incidents that were not included in Note Verbale 150.

3.14 Due to the significance of these allegations, the Director-General again decided to dispatch the FFM to the Syrian Arab Republic to collect facts pertinent to the chemical incidents as reported. The second deployment of the FFM eventually occurred between 1 August 2015 and 16 August 2015 and is described in this report under the heading 'Second Deployment Activities'.

The Main Body of the Fact-Finding Mission

3.15 The main body of the first deployment of this FFM was composed of the deputy mission leader, three inspectors, two medical doctors, and three interpreters. The team deployed on 29 May 2015 and joined the Advance Team in Damascus. Upon arrival, the main body was briefed by the Advance Team on the status of activities to date and the general outline for mission activities going forward. The full FFM team was formally introduced to the Syrian Arab Republic contingent. Final preparations for the interview process were then completed.

Investigation Activities

3.16 As described in paragraph 3.8, the FFM began investigative activities focusing on the incident of 29 August 2014 in the Jober neighbourhood of Damascus. The following sections describe the related activities carried out by the FFM.

Interviews: Methodology and Activities

3.17 The FFM planned the order of the interviews based on the availability of the witnesses, as well as on how witnesses were related to the incident. Priority was given to collecting testimonies from casualties involved in the incident, followed by the testimonies of medical doctors, nurses, and ambulance drivers.

3.18 The interviews were conducted by two sub-teams, each composed of one or more inspectors, one medical doctor, and one interpreter. The interview process followed applicable procedures established in relevant OPCW working instructions and was consistent with the specialised training mentioned in paragraph 3.1. Evidence obtained in the interviews was also processed according to applicable OPCW working instructions and specialised training.

3.19 The interview teams planned interviews based on information about the interviewee's background, the type of witness, his or her role in the incident, and information provided by other witnesses, among other factors. A package containing interview packs and evidence management packs was prepared for each interview. Each interview pack contained protocol forms, consent forms, note pages, investigative lead forms, and a folder contents list. Each evidence management pack contained receipts for evidence, drawing space forms, SD cards for video, photo and audio recordings, chain-of-custody forms for e-storage devices, a list of evidence on e-storage devices, envelopes for evidence, and a folder contents list.

3.20 The testimonies were collected in hotel accommodations set up as interview rooms. At the hotel where the interviews were being conducted, each interviewee was brought forth by the Syrian Arab Republic contingent and escorted to the interview room. There, each interviewee was greeted upon arrival by the interview team and introduced to each team member. The team member leading each interview provided an explanation about the interview process, confidentiality procedures, consent forms, procedures for protected witnesses, and the methods employed for recording the interview. The interviewees were informed upon entering the room that video and audio devices in place were not yet recording, and that no statements would be recorded until the interviewee gave informed consent to record. If and when an interviewee did not consent to be recorded by an audio or video device, a written statement was produced via the team interpreter.

3.21 Video and audio recordings, written statements, and sketches produced by the interviewees were documented as evidence and secured in the evidence management packs described above.

3.22 On 31 May 2015, the authorities of the Syrian Arab Republic submitted a list of 16 casualties related to the reported incident of 29 August 2014 in the Jober neighbourhood. According to the Syrian Arab Republic, the named individuals were affected in the described incident and received medical treatment. The authorities of the Syrian Arab Republic also submitted another list containing the names of six doctors and eleven nurses who provided treatment to the patients of the said incident.

3.23 The interviews started on 1 June 2015 with the collection of testimonies from casualties affected by the incident. On 3 June 2015, after a number of interviews with casualties and a review of the translated medical records, the FFM selected four names from the list of doctors and nurses who provided treatment to the casualties. In addition, the FFM requested the authorities of the Syrian Arab Republic to make available field medical staff who had treated patients involved in the incident of 29 August 2014 before their transfer to Hospital 601. The authorities of the Syrian Arab Republic responded verbally to the FFM that they would look into the matter and make the relevant staff available to be interviewed.

3.24 Table 2 provides the list of interviews conducted and the reasoning for selecting each individual for interview.

TABLE 2: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN JOBER ON 29 AUGUST 2014

S/N	Rank or Occupation of Interviewed Individual	Proximity to Alleged Incident in FFM Mandate	Date of Interview
1.	Military personnel	Reported casualty	1 June 2015
2.	Military personnel	Reported casualty	1 June 2015
3.	Military personnel	Reported casualty	1 June 2015
4.	Military personnel	Reported casualty	1 June 2015
5.	Military personnel	Reported casualty	1 June 2015
6.	Military personnel	Reported casualty	1 June 2015
7.	Military personnel	Reported casualty	1 June 2015
8.	Military personnel	Reported casualty	1 June 2015
9.	Military personnel	Reported casualty	1 June 2015
10.	Military personnel	Reported casualty	2 June 2015
11.	Military personnel	Reported casualty	2 June 2015
12.	Military personnel	Reported casualty	2 June 2015
13.	Military personnel	Reported casualty	2 June 2015
14.	Military personnel	Reported casualty	2 June 2015
15.	Military personnel	Reported casualty	2 June 2015
16.	Military personnel	Reported casualty	2 June 2015
17.	Military personnel	Reported casualty	2 June 2015
18.	Military personnel	Reported casualty	2 June 2015
19.	Military personnel	Reported casualty	3 June 2015

S/N	Rank or Occupation of Interviewed Individual	Proximity to Alleged Incident in FFM Mandate	Date of Interview
20.	Military personnel	Reported casualty	3 June 2015
21.	Military personnel	Reported casualty	3 June 2015
22.	Military personnel	Reported casualty	3 June 2015
23.	Medical staff	General surgeon from Martyr Youssef Al-Adhma Hospital, ER department	6 June 2015
24.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
25.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	6 June 2015
26.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
27.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
28.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
29.	Medical staff	Field nurse in the Syrian Arab army	7 June 2015
30.	Medical staff	Ambulance driver	7 June 2015
31.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	7 June 2015
32.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	7 June 2015
33.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	7 June 2015
34.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	7 June 2015
35.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	8 June 2015
36.	Medical staff	Resident medical doctor from Martyr Youssef Al-Adhma Hospital	8 June 2015
37.	Medical staff	Medical assistant from Martyr Youssef Al-Adhma Hospital	8 June 2015
38.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	8 June 2015

3.25 The gender and age distribution of the casualties and medical staff interviewed by the FFM are shown in Charts 1 and 2 below. One interviewee refused to provide his age (DNP).

CHART 1: AGE DISTRIBUTION AMONG INTERVIEWEES

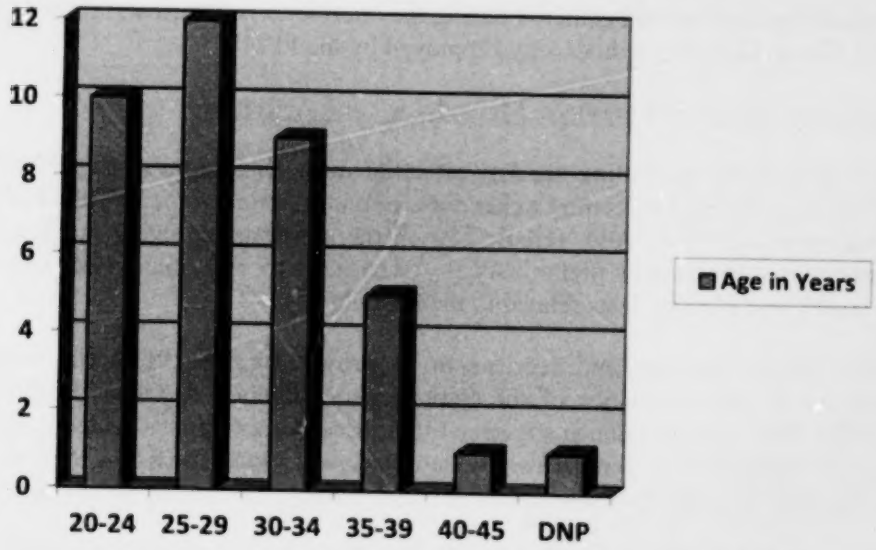
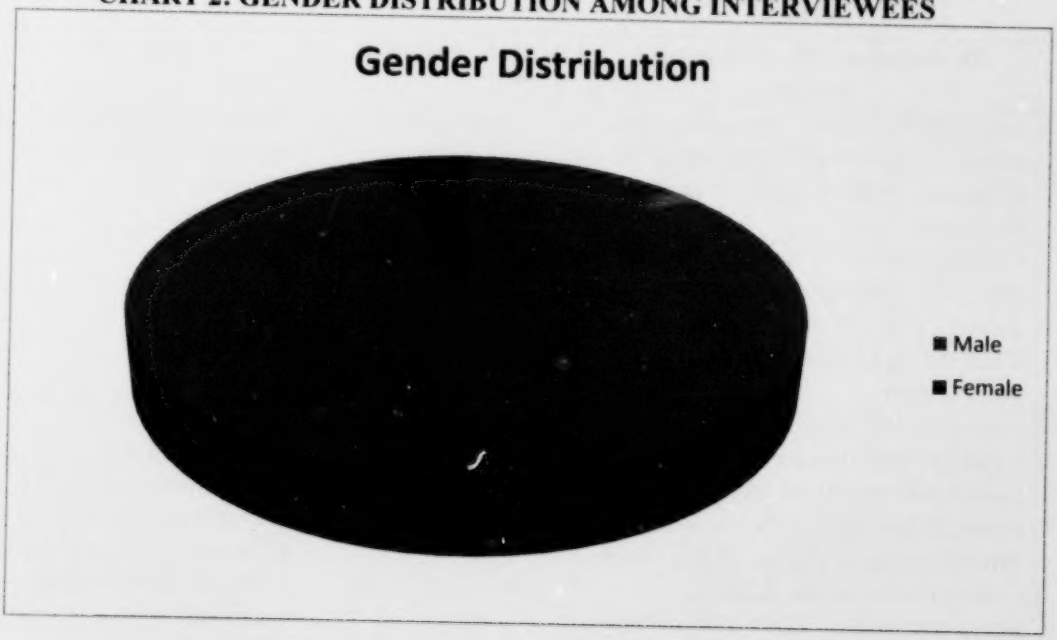


CHART 2: GENDER DISTRIBUTION AMONG INTERVIEWEES



3.26 All of the females interviewed were medical staff.

3.27 The analysis of the information gathered during the interviews is described in this report under the heading 'Data Analysis Methodology Employed by the FFM'.

Requests for Information and Services: Methodology and Activities

3.28 With due regard to the prevailing security situation in the Syrian Arab Republic, the FFM requested further information relating to key facts required for assessment. The FFM reviewed the information available in Note Verbale 150 on the incidents involving the alleged use of toxic chemicals and produced a preliminary list of requests for information and services, with a view to clarify and identify facts related to the incidents.

3.29 This request for information and services to be provided to the FFM was submitted in correspondence to the authorities of the Syrian Arab Republic (L/ODG/198036/15, dated 21 May 2015). The correspondence suggested that the requests were provided to the FFM at the time of its deployment to Damascus. The table below presents the list of requests made by the FFM, the date on which they were provided, and comments detailing what was provided.

TABLE 3: LIST OF REQUESTS MADE BY THE FACT-FINDING MISSION TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 21 MAY 2015

No.	Description of Information / Service	Date Provided	Comments
1.	Confirmed locations, including exact map coordinates and mapping of all of the reported incidents described in the letter.	See table 4	This was provided at a later date per a new request.
2.	Contemporaneous incident reports (and when appropriate copies thereof) from all parties involved, on all of the incidents described in point 1 above.	Not provided	—
3.	Access to and when appropriate copies of any medical records, patient history forms, treatment plans, X-ray images, prescription forms, discharge forms, or any other relevant information deemed necessary by the FFM for all of the casualties named in the letter.	31/05/2015, 02/06/2015, and 08/06/2015	Patient admission, examination and treatment records in the Emergency Department of Hospital 601 relating to the incident in Jober on 29/08/2014. The information was used to compile the medical report.

No.	Description of Information / Service	Date Provided	Comments
4.	If safe to do so, a visit to the Martyr Youssef Al-Adhma Hospital (Hospital 601), Damascus, to acquaint the team with the layout of the hospital, including visits to any areas where the casualties listed in the letter were treated, the hospital records repository, and the record-keeping system.	25/05/15	The FFM Advance Team used this visit to become familiar with hospital facilities, structure and staff, the first response system, and the patient information logging system.
5.	Access to and when appropriate copies of shift logs, organisational charts of the hospital, first responders, and units involved in the incidents described in the letter.	25/05/15	The FFM Advance Team was provided with a briefing on hospital organisation during the hospital visit. Copies of this briefing were not provided.
6.	Access to interview (and the opportunity to record interviews) any first responders, medical staff, explosive ordnance disposal personnel, witnesses or other persons involved in the incidents described in point 1 above as deemed appropriate by the FFM.	31/05/15	The authorities of the Syrian Arab Republic provided the FFM with a list of medical staff involved with the incidents described in Note Verbale 150, and who would be available to be interviewed by the team. Explosive ordnance disposal personnel, other witnesses or persons involved were not identified by the Syrian Arab Republic.
7.	Access to and copies of any photographic or video recordings related to the incidents described in the letter.	08/06/15	One CD with a video available on the Internet claimed to be related to the aftermath of the incident in Jober on 29 August 2014.

No.	Description of Information / Service	Date Provided	Comments
8.	If safe to do so, access any locations where remnants of any ordnance or forensic evidence retrieved from the sites listed in the letter might be stored.	N/A	The authorities of the Syrian Arab Republic informed the FFM that no remnants of ordnance or other forensic evidence were retrieved from the sites listed in Note Verbale 150.
9.	Access to any other evidence, documentation, or persons connected to the incidents described in the letter.	Not provided	—
10.	Access to and copies of any additional relevant documents or other information to be reviewed during the FFM.	Not provided	—
11.	Any other matters that may become relevant during the FFM.	Various dates	See list of documents provided by Syrian Arab Republic NA in Annex 7. A number of these documents were already in the FFM's possession as they had appeared in Note Verbale 150. Other documents containing new information were reviewed; however, no clear link could be established to any of the incidents investigated by the FFM in its mandate.

3.30 Next, based on its interviews with witnesses and casualties of the Jober incident of 29 August 2014, the FFM submitted a request for additional information to the authorities of the Syrian Arab Republic. This request aimed to clarify the scenario as it had been described by the interviewees and allow for a more detailed understanding of the incident. Table 4 lists the requests made by the FFM and the responses received from the authorities of the Syrian Arab Republic.

TABLE 4: THE LIST OF REQUESTS MADE BY THE FACT-FINDING MISSION TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 5 JUNE 2015

No.	Description of Information / Service	Provided on	Comments
1.	The exact locations, including the co-ordinates and marked maps of the soap factory, the decontamination station and the Al-Abbassiyyin Polyclinic (مشفى العباسيين), all of which were mentioned in many of the interviews.	08/06/2015	Images from Google Earth® detailing key locations related to the incident in Jober on 29/08/2014
2.	Any written reports that may be available concerning the incident of 29 August 2014.	31/05/2015 and 08/06/2015	- A report containing a short summary of the incident in Jober, not dated or signed. - An incident report by a Unit Commander dated 08/06/2015 related to the incident in Jober on 29/08/2014
3.	A list of the first responders or ambulance personnel that transported casualties from the area of the soap factory to the Al-Abbassiyyin Polyclinic and the Martyr Youssef Al-Adhma Hospital (Hospital 601). It is requested that some of these personnel should be available for interview on Sunday 7 June 2015.	Not provided	—
4.	Reports on the disposal of the clothing that was removed from the casualties at the Dressing Station or the hospitals.	Not provided	—
5.	Access to review and copy the chest X-rays of a particular casualty listed and subsequently interviewed by the FFM (this individual's name was provided to the Syrian Arab Republic).	Not provided	—
6.	Access to review and copy medical laboratory analysis, blood test results and any related log books.	Not provided	—
7.	Photographs of the patient admission log at the mentioned hospitals.	Not provided	—

No.	Description of Information / Service	Provided on	Comments
8.	Video footage (or links) corresponding to the events described.	Not provided	No additional information was provided other than that listed on Table 3
9.	Clarification—in the form of a short written statement—of the reasons why the other casualties on the list for the incident of 29 August 2014 could not be interviewed.	08/06/15	A list with names of soldiers who did not attend the interviews along with the reasons why

3.31 An analysis of the information gathered from the documents and services provided is can be found under the heading 'Data Analysis Methodology Employed by the FFM'.

SECOND DEPLOYMENT ACTIVITIES

3.32 As detailed in paragraph 3.13, the authorities of the Syrian Arab Republic informed the FFM Advance Team during its deployment in May 2015 that other, more recent incidents involving the alleged use of toxic chemicals had occurred in Syria. The Permanent Representation of the Syrian Arab Republic submitted to the OPCW Secretariat Note Verbale 41 (29 May 2015), Note Verbale 43 (3 June 2015), and Note Verbale 47 (15 June 2015) detailing these incidents.

3.33 The tables below summarise the information in Notes Verbales 41, 43, and 47.

TABLE 5: SUMMARY OF ALLEGED INCIDENTS IN NOTE VERBALE 41

No.	Date	Location	Number of Casualties
1.	19/03/2013	Khan Asal	144 (fatalities and injured)
2.	27/05/2013	Jober	11
3.	22/08/2013	Al-Bahriya	16
4.	24/08/2013	Jober	4
5.	August 2013	Muadamiyat al-Sham	No information provided
6.	24/04/2014	Dar'a – Nawa	70
7.	11/07/2014	Jober	6
8.	23/08/2014	Jober	11
9.	01/09/2014	Aleppo – Jam'iyyat Al-Zahraa quarters	5 civilians injured
10.	08/01/2015	Nubel and Al-Zahraa	17
11.	January 2015	Jober	21

No.	Date	Location	Number of Casualties
12.	15/02/2015	Darayya	8
13.	06/04/2015	Jober	4
Total	**13 separate incidents**	**8 locations (areas around Damascus and Aleppo)**	**317 casualties**

TABLE 6: SUMMARY OF ALLEGED INCIDENTS IN NOTE VERBALE 43

No.	Date	Location	Number of Casualties
1.	29/05/2015	Harasta	7 fatalities and 10 injured personnel.
2.	29/05/2015	Al-Tadhamun	6 fatalities
3.	31/05/2015	Salqeen city	N/A – Report of possession of toxic chemicals
Total	**3 separate incidents**	**3 locations**	**23 casualties**

TABLE 7: SUMMARY OF ALLEGED INCIDENTS IN NOTE VERBALE 47 AND ELABORATION OF 6 INCIDENTS REPORTED IN NOTE VERBALE 41

No.	Date	Location	Number of Casualties	Comments
1.	24/04/2014	Dar`a – Nawa	70 fatalities	A brief description of the incident.
2.	01/09/2014	Aleppo – Jam'iyyat Al-Zahraa quarters	5 civilians injured (including one fatality)	A brief description of the incident, including signs and symptoms, and mention of one fatality.
3.	January 2015	Jober	Approx. 20	A brief description of the incident, including signs and symptoms and mention of three fatalities.
4.	08/01/2015	Nubel and Al-Zahraa	Not mentioned	A brief description of the incident, including signs and symptoms.

No.	Date	Location	Number of Casualties	Comments
5.	15/02/2015	Darayya	8	A brief description of the incident, signs and symptoms, a more precise location, the hospital where casualties received treatment, and the names of casualties (military personnel).
6.	06/04/2015	Jober	4	A brief description of the incident, including signs and symptoms.
Total	**6 separate incidents**	**5 locations (areas around Damascus, Dar'a and Aleppo)**	**Approx. 107 casualties**	**N/A**

3.34 In light of the severity of the allegations made in Notes Verbales 41, 43, and 47, the Director-General dispatched the FFM to the Syrian Arab Republic for a second investigative deployment. For this deployment, the FFM's mandate was to gather facts related to the incidents described in Notes Verbales 41, 43 and 47, in addition to Note Verbale 150.

3.35 The Secretariat sent a note verbale to the authorities of the Syrian Arab Republic (NV/ODG/198787/15, dated 30 June 2015) proposing the scope of the investigation for the FFM's second deployment. The FFM proposed to establish the facts on two additional incidents that had reportedly taken place in 2014, and one in 2015, as indicated in Notes Verbales 150, 41, 43, and 47. As the availability of witnesses for interview was fluid in light of the security situation in the Syrian Arab Republic, the FFM sought confirmation from the authorities of the Syrian Arab Republic as to which witnesses would be available for interview prior to deployment. The FFM planned to use this information to select the incidents it would investigate once in country. Additionally, in order to ensure that the FFM team was able to perform its work efficiently within the 14-day time-frame agreed upon in the Terms of Reference, the FFM team suggested a maximum of 12 individuals to be interviewed per incident. These interviewees should, to the greatest extent possible, represent a cross-section of interviewee types, such as casualties, first responders, medical personnel, and eye witnesses.

3.36 In its second deployment to the Syrian Arab Republic, the FFM was composed of the mission team leader, seven team members, two medical doctors, and three interpreters. This deployment took place from 1 August 2015 to 16 August 2015. The FFM leadership provided a copy of its mandate (in English and Arabic) to the authorities of the Syrian Arab Republic at their first meeting on 3 August 2015.

Investigative Activities

3.37 As previously mentioned, the FFM proposed that the scope of its second deployment would include two alleged incidents reported to have taken place in 2014 and one in 2015, as indicated in Notes Verbales 150, 41, 43, and 47 (NV/ODG/198787/15, dated 30 June 2015). In order to prepare in an efficient and effective manner, the FFM requested that the authorities of the Syrian Arab Republic specify which alleged incidents could be investigated ahead of time. Information about the alleged incidents that could be investigated was provided to the FFM upon arrival in Damascus.

3.38 In this context, the following alleged incidents were investigated by the FFM during its second deployment:

(a) An incident in Al-Maliha on 16 April 2014

(b) An incident in Al-Maliha on 11 July 2014

(c) An incident in Al-Kabbas on 10 September 2014

(d) An incident in Nubel and Al-Zahraa on 08 January 2015

(e) An incident in Darayya on 15 February 2015

3.39 In addition, the FFM asked to re-interview one casualty from the incident of 29 August 2014 in Jober.

3.40 The Syrian Arab Republic also provided documents related to the following alleged incidents:

(a) An incident in Jober on 16 April 2014

(b) An incident in Al-Maliha on 2 July 2014

(c) An incident in Al-Maliha on 8 July 2014

(d) An incident in Darayya on 15 August 2014

(e) An incident in Jober on 4 September 2014

(f) An incident in Al-Kabbas on 18 September 2014

3.41 Furthermore, on 9 and 11 August 2015, the FFM requested another visit to Hospital 601. The aim of the visit was to obtain more information about patients who were admitted and related treatment protocols. This visit took place on 13 August 2015.

3.42 The FFM was also permitted to visit to the Centre for Studies and Scientific Research Institute in Barzi, Damascus, on 12 and 14 August 2015. An initial visit was made on 12 August 2015, during which the team received a site tour and had a discussion with the head of the research institute on the storage and research methods for blood collected for acetyl-cholinesterase (AChE) analysis. It was during this visit that the FFM was made aware of the existence of a number of blood samples stored on site in relation to the incident in Darayya on 15 February 2015. On 14 August 2015, the FFM revisited the institute to seal the selected blood samples.

Interviews: Methodology and Activities

3.43 The interview methodology was the same as in the first deployment and is described in this report under the heading 'First Deployment Activities, The Main Body of the Fact-Finding Mission, Interviews: Methodology and Activities'.

3.44 In its letter detailing the proposed scope of the investigation for its second deployment, the FFM suggested that a maximum of 12 individuals be interviewed per allegation, and that two incidents reported to have taken place in 2014 and one in 2015 be investigated (NV/ODG/198787/15, dated 30 June 2015). Collecting the testimonies of a total of 36 interviewees meant ensuring that the FFM conducted its investigative activities in an efficient manner during the proposed time frame of the visit to the Syrian Arab Republic. In addition, the FFM requested that the interviewees for each incident represented a cross-section of casualties, first responders, medical personnel, and eye witnesses to the greatest extent possible.

3.45 The FFM's letter also pointed out that the FFM leadership would like to discuss and confirm which witnesses would be available for interview prior to the team's arrival in Damascus. This request envisaged allowing the team to prepare for the interviews ahead of time. Nonetheless, the FFM was aware of the possibility that the security situation in the Syrian Arab Republic might create restrictions on obtaining an advance list of interviewee names.

3.46 The FFM sent another note verbale requesting an opportunity to re-interview one casualty from the incident in Jober on 29 August 2014 (NV/VER/CDB/199375/15, dated 30 July 2015). This request was made with a view to clarify points of the narrative of this particular incident, which had been the subject of investigation during the FFM's first deployment (see 'First Deployment Activities, The Main Body of the Fact-Finding Mission, Interviews: Methodology and Activities' for more details).

3.47 Information about the availability of individuals to be interviewed and the incidents to which they were connected was provided to the FFM during the initial meetings in Damascus. The Syrian Arab Republic proposed additional incidents and interviewees to the FFM. This proposal was agreed upon, on condition of the completion of all of the interviews within the time frame specified in the Terms of Reference.

3.48 The interviews commenced on 8 August 2015.

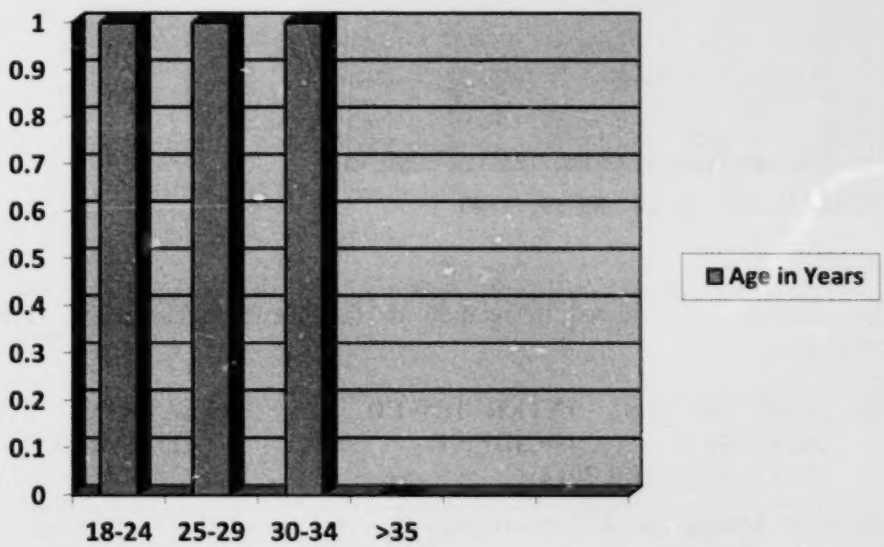
3.49 On 9 August 2015, after interviewing a number of casualties and medical staff, the FFM sent another request with a list of names of individuals to be interviewed. The requested individuals were medical staff relevant to the reported incident in Darayya on 15 February 2015.

3.50 Tables 8 through 13 contain lists of interviews conducted for each incident, as well as the reasons for selecting each individual for interview. In addition, Charts 3 through 9 detail the age and gender of each individual interviewed.

TABLE 8: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 16 APRIL 2014

S/N	Rank or Occupation of Interviewed Individual	Proximity to Incident in FFM Mandate	Date of Interview
1.	Medic / Nurse	First aid point on ambulance	13/08/2015
2.	Captain	Reported casualty	13/08/2015
3.	Lieutenant	Reported casualty	13/08/2015

CHART 3: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 16 APRIL 2014

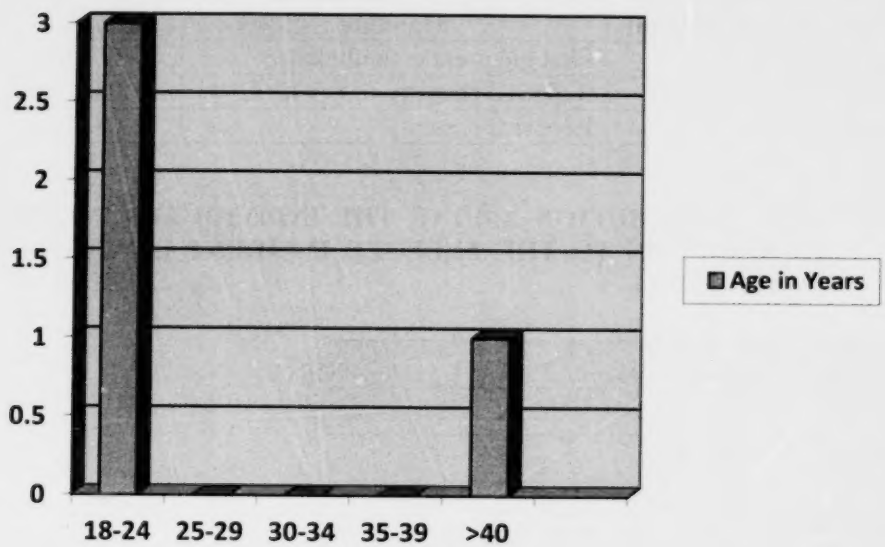


3.51 All of the witnesses interviewed in relation to the incident in Al-Maliha on 16 April 2014 were male.

TABLE 9: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 11 JULY 2014

S/N	Rank or Occupation of Interviewed Individual	Proximity to Incident in FFM Mandate	Date of Interview
1.	Military personnel	Reported casualty	13/08/2015
2.	Military personnel	Reported casualty	13/08/2015
3.	Military personnel	Reported casualty	13/08/2015
4.	Military personnel	Reported casualty	13/08/2015

CHART 4: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 11 JULY 2014

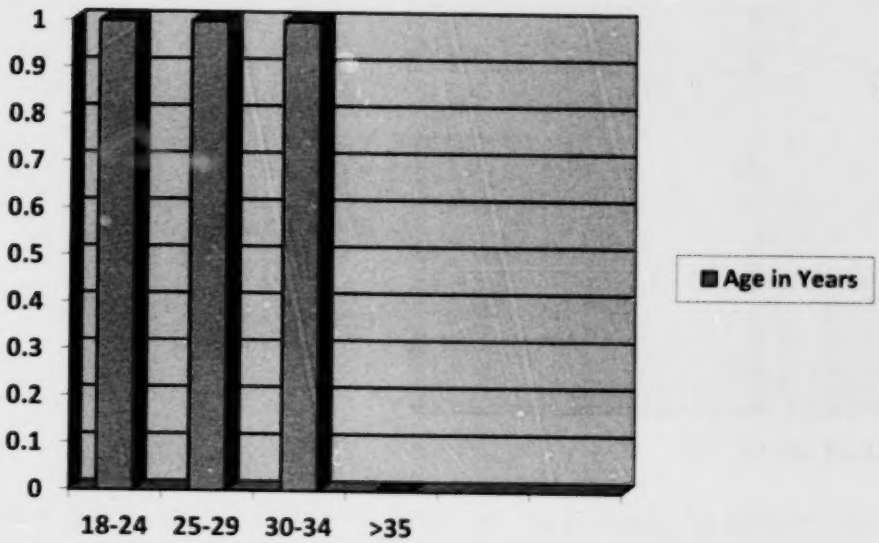


3.52 All of the witnesses interviewed in relation to the alleged incident in Al-Maliha on 11 July 2014 were male.

TABLE 10: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-KABBAS ON 10 SEPTEMBER 2014

S/N	Rank or Occupation of Interviewed Individual	Proximity to Incident in FFM Mandate	Date of Interview
1.	Military personnel	Reported casualty	13/08/2015
2.	Medic / Nurse	First aid point on ambulance	13/08/2015
3.	Military personnel	Reported casualty	13/08/2015

CHART 5: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-KABBAS ON 10 SEPTEMBER 2014

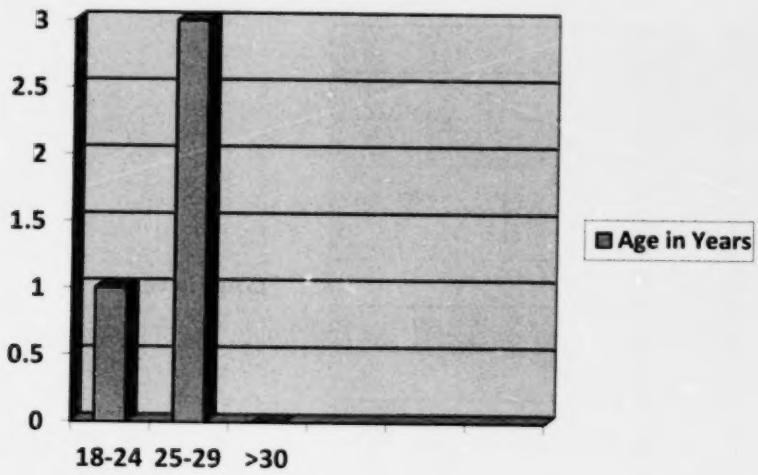


3.53 All of the witnesses interviewed in relation to the incident in Al-Kabbas on 10 September 2014 were male.

TABLE 11: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN NUBEL AND AL-ZAHRAA ON 8 JANUARY 2015

S/N	Rank or Occupation of Interviewed Individual	Proximity to Incident in FFM Mandate	Date of Interview
1.	Military medic	First aid point - 150m	12/08/2015
2.	Civilian, local defence force	Reported casualty	12/08/2015
3.	Civilian, local defence force	Reported casualty	12/08/2015
4.	Civilian	Witness within visual range	12/08/2015

CHART 6: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN NUBEL AND AL-ZAHRAA ON 8 JANUARY 2015



3.54 All of the witnesses interviewed in relation to the incident in Nubel and Al-Zahraa on 8 January 2015 were male.

TABLE 12: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015

S/N	Rank or Occupation of Interviewed Individuai	Proximity to Incident in FFM Mandate	Date of Interview
1.	Military personnel	Reported casualty	08/08/2015
2.	Military personnel	Reported casualty	09/08/2015
3.	Military personnel	Reported casualty	08/08/2015
4.	Military personnel	Reported casualty	08/08/2015
5.	Military personnel	Reported casualty	09/08/2015
6.	Military personnel	Reported casualty	09/08/2015
7.	Military personnel	Reported casualty	08/08/2015
8.	Military personnel / Physician	Field physician at medical point	09/08/2015
9.	Senior consultant / Physician	Physician at Hospital 601	11/08/2015
10.	Cardiologist / Physician	Physician at Hospital 601	10/08/2015
11.	Resident physician	Physician at Hospital 601	10/08/2015
12.	Physician	Supervisor / Physician at Hospital 601	11/08/2015
13.	Nurse	Nurse at Hospital 601	11/08/2015
14.	Physician, internal and endocrine	Physician at Hospital 601	10/08/2015
15.	Nurse	Nurse at Hospital 601	10/08/2015

3.55 The gender and age distribution of the casualties and medical staff interviewed by the FFM related to this incident are depicted in Chart 7.

CHART 7: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015

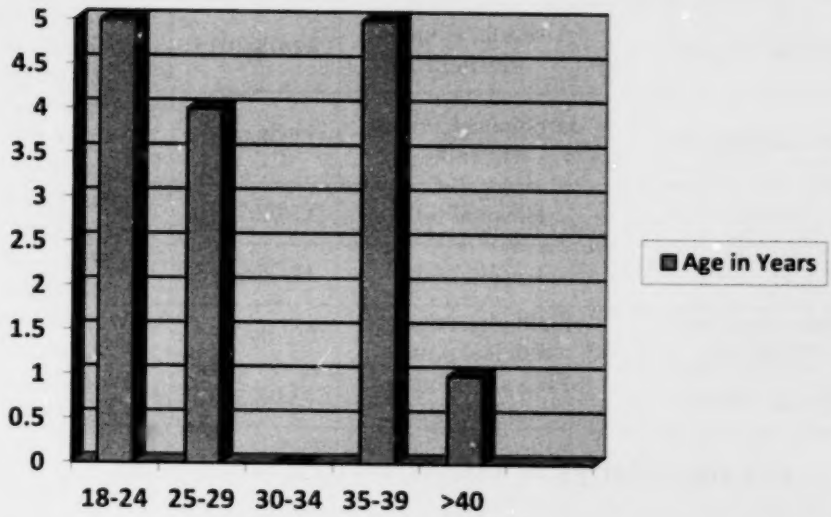
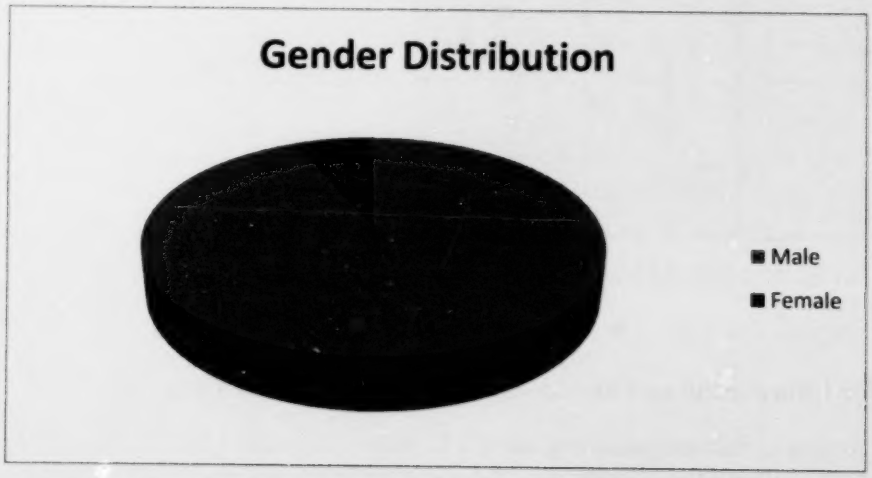


CHART 8: GENDER DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015

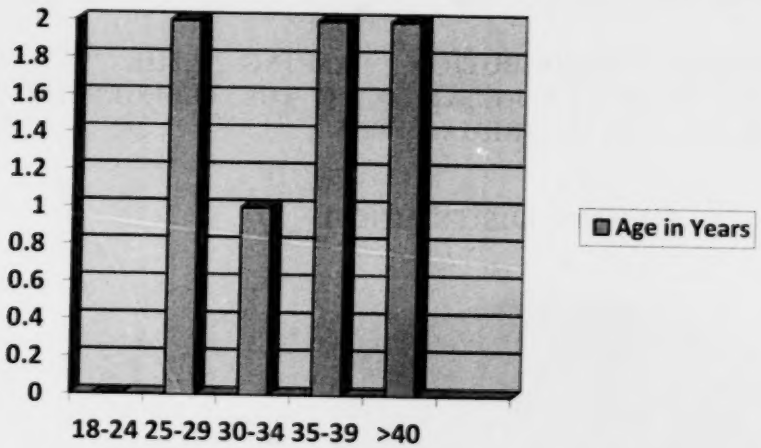


3.56 In addition, testimonies from medical staff connected to more than one reported incident were collected by the FFM. The information about these interviews is summarised in Table 13.

TABLE 13: OTHER INTERVIEWEES

S/N	Rank or Occupation of Interviewed Individual	Proximity to Incident in FFM Mandate	Date of Interview	Comments
1.	Chief Surgeon	Head of Maliha Area Civilian Hospital	11/08/2015	Reviewed patient cases from four incidents
2.	General Surgeon	Al-Radhi Civilian Hospital	11/08/2015	Received patients from four incidents
3.	General Surgeon	Jarramana Civilian Hospital	11/08/2015	Received patients from four incidents
4.	Nurse	Hospital 601	11/08/2015	No casualty contact
5.	Chief Nurse	Hospital 601	11/08/2015	No casualty contact
6.	Military personnel / Physician	Field physician at medical point	09/08/2015	Witnessed two incidents
7.	Medic / Nurse	First aid point on ambulance	13/08/2015	Witnessed two incidents

CHART 9: AGE DISTRIBUTION AMONG OTHER WITNESSES



3.57 All of the witnesses in Table 13 were male.

Request for Information and Services: Methodology and Activities

3.58 The FFM reviewed the information available in Notes Verbales 150, 41, 43, and 47 related to the incidents involving the alleged use of toxic chemicals and produced a preliminary list of requests for information and services with a view to clarifying and identifying facts related to these incidents.

3.59 This request for information and services to be provided to the FFM was submitted in a note verbale to the authorities of the Syrian Arab Republic (NV/ODG/198787/15, dated 30 June 2015). The correspondence specified that part of the information should be provided to the FFM prior to its deployment. Table 14 shows the list of requests made by the FFM, whether the request was to be provided prior to or during the FFM's deployment, the date when the request was met, and comments detailing what was provided. The contents of the documents provided by the Syrian Arab Republic were under review at the time at which the interim report was issued.

TABLE 14: LIST OF REQUESTS MADE BY THE FACT-FINDING MISSION TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 30 JUNE 2015

No.	Description of Information / Service	Provided on	Comments
1.	Confirmed locations, including exact map coordinates, of all of the incidents reported in Notes Verbales 150, 41, 43, and 47. Requested to be provided to the FFM prior to its arrival in Damascus.	07/08/15	1xCD with images from Google Earth® detailing key locations related to the incident in Darayya (15/02/15).
		12/08/15	1xCD with images from Google Earth® detailing key locations related to the incident of Nubel and Al-Zahraa (08/01/15).
		13/08/15	4xCDs with screenshots from Google Maps showing the locations of the following incidents: ▪ Al-Maliha (16/04/14) ▪ Al-Maliha (08/07/14) ▪ Al-Maliha (11/07/14) ▪ Al-Kabbas (10/09/14)
2.	Arrange for access to contemporaneous incident reports and copies thereof from all parties involved and regarding all of the incidents reported in Notes Verbales 150, 41, 43, and 47.	07/08/15	A report from the commander of the unit deployed in Darayya on the date of the incident on 15/02/15. Report not dated.
		12/08/15	A complaint about the incident registered with the Nubel police station and related to the incident of Nubel and Al-Zahraa on 08/01/15.
		13/08/15	A report of the Colonel in command of Administrative Unit 270, relating to the

No.	Description of Information / Service	Provided on	Comments
			incident in Al-Maliha (16/04/14). Report not dated.
			A report from the Commander of Battalion 177, Mechanised Infantry, relating to the incident in Al-Maliha (08/07/14). Report dated 11/08/2014.
			A report from the Colonel Commander of Battalion 177, Mechanised Infantry, relating to the incident in Al-Maliha (11/07/14). Report dated 11/08/2014.
			A report from the Colonel in command of Battalion 408, Artillery, relating to the incident of Al-Kabbas (10/09/14). Report dated 13/10/2014.
3.	Arrange for access to and copies of any medical records, including patient history forms, treatment plans, X-ray images, prescription forms, discharge forms, or any other relevant information deemed necessary by the FFM, for all of the casualties named in Notes Verbales 150, 41, 43, and 47.	07/08/15	Medical records of 8 casualties listed in Note Verbale 47, relating to the incident in Darayya (15/02/15).
		07/08/15	AchE results for 6 casualties listed in Note Verbale 47, relating to the alleged incident in Darayya (15/02/15).
		10/08/15	Medical records of 7 casualties listed in Note Verbale 150.
		12/08/15	A report from the Al-Zahraa hospital referring to the incident in Nubel and Al-Zahraa (08/01/15) (Notes Verbales 41 and 47).
		13/08/15	Medical records of 35 casualties listed in Note Verbale 150.
			AchE results (dated 21-23/04/14) for 14 casualties listed in Note Verbale 150.
4.	If safe to do so, arrange for visits to the hospitals or clinics in Damascus or any other locations where the casualties named in Notes Verbales 150, 41, 43, and 47 were treated.	13/08/15	Another visit to the hospital was arranged for the FFM.

No.	Description of Information / Service	Provided on	Comments
5.	Arrange for access to and copies of shift logs and organisational charts of the hospitals, clinics, or other locations where casualties of the incidents reported in Notes Verbales 150, 41, 43, and 47 were treated.	N/A	—
6.	Identify and arrange for access to interview any persons involved in the incidents reported in Notes Verbales 150, 41, 43 and 47, as deemed appropriate by the FFM in accordance with previously agreed practice and protocol.	Various dates	Interviews were conducted as described in this report under the heading 'Deployment Activities, Investigation Activities, Interviews: Methodology and Activities'.
7.	Arrange access to any photographic materials or video recordings and copies thereof relating to the incidents reported in Notes Verbales 150, 41, 43, and 47. Requested to be provided to the FFM prior to its arrival in Damascus.	N/A	Not provided due to unavailability of the requested material.
8.	If safe to do so, arrange access to any locations where remnants of any ordnance or forensic evidence retrieved from the sites related to incidents reported in Notes Verbales 150, 41, 43, and 47 may be located or stored.	N/A	Not provided due to the security situation.
9.	Arrange access to any other information or documentation relevant to the incidents reported in Notes Verbales 150, 41, 43, and 47. Requested to be provided to the FFM prior to its arrival in Damascus.	07/08/15	List of patients admitted to Hospital 601, relating to the incident in Darayya (15/02/15).
		10/08/15	List of patients admitted to Hospital 601 relating to the incident in Al-Kabbas (18/09/14).
		12/08/15	List of patients admitted to Hospital 601 for the following incidents reported in Note Verbale150: Jober (16/04/14), Al-Maliha (16/04/15), Al-Maliha (11/07/14), Darayya (15/08/14), Jober (04/09/14), Al-Kabbas (10/09/14), and Al-Kabbas (18/09/14).

No.	Description of Information / Service	Provided on	Comments
		13/08/15	List of patients admitted to Al-Radhi hospital on the following dates: 16/04/14, the night between 16/04/14 and 17/04/14, 08/07/14, and 12/07/14.
10.	Arrange access to and copies of any additional relevant documents or other information to be reviewed during the FFM. Requested to be provided to the FFM prior to its arrival in Damascus.	13/08/15	8xDVDs with video footage.
		14/08/15	Pack of colour images of weapons.
11.	Assist with any other matter that the FFM team deems relevant to its work during the course of the visit.	N/A	—

3.60 Next, based on the interviews with the witnesses and casualties of the various incidents, the FFM submitted requests for additional information to the authorities of the Syrian Arab Republic. The requests aimed to clarify the various issues that were identified during the interviews and subsequent review of documents. A comprehensive list of requests made by the FFM during its deployment and the responses received from the authorities of the Syrian Arab Republic is provided in the following table.

TABLE 15: LIST OF REQUESTS MADE BY THE FFM TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 9 AUGUST 2015

No.	Description of Information / Service	Provided on	Comments
1.	The FFM requested to interview the head of the laboratory where the AChE results were analysed and five medical doctors from Hospital 601.	10, 11, 12, and 14/08/ 2015	An informal discussion took place with the head of laboratory where the AChE results were analysed during the two visits conducted to the Research Institute.
2.	Request to visit Hospital 601, especially the laboratory where the AChE results were analysed.	12 and 13/08/2015	Access to Hospital 601 was provided, as well as a visit to the Research Institute, where the AChE analysis took place.
3.	Request to re-interview a casualty from the incident of Jobar on 29/08/14.	12/08/15	Casualty was re-interviewed.

<table>
<tr><th>No.</th><th>Description of Information / Service</th><th>Provided on</th><th>Comments</th></tr>
<tr><td>4.</td><td>Have access to the remaining medical records of the casualties listed in the other incidents reported in NV 150.</td><td>12/08/15</td><td>Document containing reports from Hospital 601 detailing the reasons for the unavailability of medical records of 17 casualties listed in the following alleged incidents:
<table>
<tr><th>Alleged incident (NV 150)</th><th>Missing medical records</th></tr>
<tr><td>Jober (16/04/14)</td><td>01</td></tr>
<tr><td>Darayya (15/08/14)</td><td>04</td></tr>
<tr><td>Jober (04/09/14)</td><td>04</td></tr>
<tr><td>Al-Kabbas (10/09/14)</td><td>03</td></tr>
<tr><td>Al-Kabbas (18/09/14)</td><td>05</td></tr>
</table></td></tr>
</table>

TABLE 16: LIST OF REQUESTS MADE BY THE FFM TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 11 AUGUST 2015

No.	Description of Information / Service	Provided on	Comments
1.	Visit the pharmacy within the ED. Staff should be available to discuss the medication that was prescribed to the patients involved in the incidents that the FFM is currently investigating. Records of the medication prescribed and subsequently issued to these patients should be made available for copying and photocopying.	13/08/15	Access to the pharmacy was provided. Records were available for review; however, no photocopies were made available.
2.	Review the ED admission log books, for purposes of photocopying and/or photography, regarding any of the incidents that the FFM is currently investigating.	13/08/15	Access to the documents was provided; however, no photocopies were made available.

3.	Request to a treating physician to locate the 5 X-rays that he referred to in his interview. The availability of this doctor to discuss these X-rays with one of the FFM doctors whilst at hospital on 13/08/15 would be appreciated.	Not provided	The doctor was unable to retrieve requested X-rays from the computer, due to media storage limitations.

TABLE 17: LIST OF REQUESTS MADE BY THE FFM TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 12 AUGUST 2015 (REQUEST FOR DOCUMENTATION AND ACCESS TO SAMPLES - AFTER CONDUCTING THE VISIT TO THE RESEARCH INSTITUTE OF PHARMACEUTICAL AND CHEMICAL INDUSTRY, BARZI, DAMASCUS, ON 12/08/15)

No.	Description of Information / Service	Provided on	Comments
1.	A copy of the document titled "blood AChE activity in Syrian soldiers: 2013-2015" which was referred to during the briefing at the Research Institute.	13/08/15	This document included 13 reports of AChE results dated in 2013, 2014, and 2015. Only three of these reports could be clearly linked to incidents included in the mandate; Jober (16/04/14), Al-Maliha (16/04/14) (NV 150), and Darayya (15/02/15) (NVs 41 and 47). Another report, dated 31/05/15, contained results of tests conducted on seven and six fatalities which occurred in Harasta and Al-Tadhamun respectively. This information is not clearly linked to the incidents described in NV 43. Moreover, in the conclusion of the report, the AChE activity was normal.
2.	Calibration certificates for all thermometers involved in the transport, storage and analysis of blood samples for AChE testing at the Research Institute.	Not provided	Non-current validation certificates were presented.

No.	Description of Information / Service	Provided on	Comments
3.	Calibration certificates for the automatic pipettes used in the analysis of blood or plasma for AChE testing at the research Institute.	Not provided	Non-current validation certificates were presented.
4.	Access to blood or plasma samples involved in AChE testing at the Research Institute, as listed in point 1 above, for the purposes of segregation and the application of OPCW seals and/or tags with a view to possible future analysis by the FFM in a location outside the Syrian Arab Republic.	Access was provided on 14/08/15	Seals were applied to the selected samples.

TABLE 18: LIST OF REQUESTS MADE BY THE FFM TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 13 AUGUST 2015

No.	Description of Information / Service	Provided on	Comments
1.	One ampoule of HI-6 (at least), examples of which were located in the emergency room pharmacy of Hospital 601.	14/08/15	1 HI-6 vial was provided.
2.	Supporting documentation for the indications for use of HI-6, including but not necessarily restricted to contra-indications and storage.	14/08/15	The document entitled "List of emergency medication for poisoning cases" contains details about the medications' names (such as HI-6 dichloride and pralidoxime) dosage, forms, indications and remarks.
3.	At least one example each of the vacutainers (blood sample containers) containing heparin and EDTA that are used for the storage and transport of blood samples destined for AChE testing.	14/08/15	3 vacutainer vials were provided.

4.	Any documentation that will assist the FFM in proving the stock control and prescription of HI-6 and atropine where either or both medications have been prescribed for any of the patients whose records have been provided to the FFM.	14/08/15	35 medical prescriptions were provided. There is no clear indication as to which incidents these prescriptions are linked with.
		14/08/15	Nine drug charts from hospital 601 were provided. Seven charts are dated in 2013 and two on 17/02/15 and 18/02/15, respectively. According to the charts dated in February 2015, four casualties listed in NV 47 (alleged incident of Darayya, 15/02/15) were given HI-6 and dematropine.

DATA ANALYSIS

Data Analysis Methodology Employed by the Fact-Finding Mission

3.61 The FFM inspectors conducted an analysis of the alleged incidents, with a focus on identifying aspects related to the use of chemicals as a weapon. The analysis methodology used by the team to evaluate interviews and documents provided by the authorities of the Syrian Arab Republic is described in this report under the following headings: 'Interview Analysis Methodology' (paragraphs 3.64 – 3.67) and 'Analysis of Information Provided to the Fact-Finding Mission in the Form of Documents and Services'.

3.62 The analysis of the medical information provided to the FFM in the form of records, services, or testimonies collected by the team was carried out by the medical doctors attached to the FFM and is described in Annex 1 to this report.

3.63 Both of the analyses specified in paragraphs 3.61 and 3.62 were taken into account to fulfil the FFM's mandate.

Interview Analysis Methodology

3.64 The interview analysis methodology employed by the FFM allowed individual accounts to be collated into a prevailing narrative where factual content could be extracted and reported according to the mandate. The various steps of this methodology are described in the next paragraphs.

3.65 First, the audio and video records of each interview conducted by the team were translated and transcribed into English by qualified interpreters in order to facilitate their thorough analysis.

3.66 Then, the verbal content of each interview (video, audio, and transcripts thereof) was carefully reviewed by at least two FFM inspectors. In order to organise the individual responses, a timeline-based analysis table was produced. This allowed each respondent's description of locations, sights, sounds, smells, and actions to be categorised according to relevant variables. During the interview review process, the FFM inspectors matched the interviewees' responses to their respective variables in the analysis table. The result for each interview was a unique description of the evolving, sequential event, from the perspective of that individual interviewee. Once all relevant narratives had been assembled individually, they were compared against one another to identify commonalities and discrepancies.

3.67 Commonalities formed the basis of the prevailing narrative and discrepancies were analysed to determine their significance. Given that some of the incidents subject to investigation had occurred more than a year prior to the interviews, the FFM anticipated reasonable discrepancies in the recalled events from one respondent to the next. In cases where discrepancies were minor or of little consequence to establishing a prevailing narrative (i.e., the recollection of general timings and distances), they were disregarded. In cases where discrepancies were more significant, or where they starkly deviated from the prevailing narrative, they were noted and assessed further in the context of other evidence to see if they could be reconciled. If reconciliation with the prevailing narrative was not possible, the discrepant narrative could be considered limited in value and therefore difficult to objectively address the FFM's mandate aims. However, cases where discrepant narratives detailed other severe allegations in relation to the use of toxic chemicals as a weapon have also been noted by the FFM.

3.68 The following sections provide the analysis of the testimonies collected by the FFM and categorised by each alleged incident.

Analysis of Information Provided to the Fact-Finding Mission in the Form of Documents and Services

3.69 The information and services provided to the FFM by the authorities of the Syrian Arab Republic is listed in in this report under the headings 'First Deployment Activities, the Main Body of the Fact-Finding Mission, Interviews: Methodology and Activities', and 'Second Deployment Activities, Request for Information and Services: Methodology and Activities'. The FFM reviewed the information provided in order to gather facts regarding the incidents involving the alleged use of toxic chemicals. The analysis of the documents pertaining to each incident that was investigated is described in the sections below.

Analysis of the Alleged Incident in Jober on 29 August 2014

Interview Analysis

3.70 The prevailing narrative established by a review of all of the interviews relating to this reported incident is as follows:

(a) It is apparent that some form of military engagement occurred on 29 August 2014 in the described area of Jober, Damascus. In this military engagement, a group of about 35 soldiers from the Syrian Arab Army were preparing to advance towards an area held by an opposition group.

(b) A chemical incident occurred around 18:00. In this incident, a number of soldiers were proximate to two launched objects of an unknown type which landed in the street. Some of the soldiers were indoors, while others were outdoors.

(c) Upon the objects' impact, the soldiers noted some combination of dust, smoke, or mist, which produced a distinct odour described by most as being similar to rotting flesh.

(d) This unidentifiable malodorous substance triggered a host of varying symptoms, the overall presentation of which was consistent with acute, non-specific irritation of the mucosa and respiratory tract.

(e) The affected soldiers assisted one another in retreating from the impact area and received general supportive care at a forward medical point (Al-Abbassayyin) before being evacuated by ambulance to a military hospital some distance away (Hospital 601).

(f) In hospital, non-specific supportive care continued for the affected soldiers until discharge, which in most cases was within 24 hours of arrival. The general condition upon discharge varied considerably amongst the affected soldiers, although all reported improvement.

3.71 The FFM identified a notable discrepancy in the prevailing narrative referring to an additional incident. The main points of this discrepant narrative are as follows:

(a) Two of the casualties interviewed by the FFM alleged that an incident involving a toxic chemical occurred around 16:00 on the same day.

(b) According to the testimonies of these two casualties, a group of around 15 soldiers of the Syrian Arab Army were confronting enemies in Jober when a device allegedly filled with what was described by these two soldiers as a chlorine-like gas was thrown at the group.

(c) The described chemical incident incapacitated some of the group, apparently preventing them from escaping the scene and ultimately leading to their capture and execution.

(d) The two soldiers who were interviewed described symptoms upon contact with a chemical that are consistent with acute, non-specific irritation of the mucosa and respiratory tract.

(e) There then followed a combat/fire fight with opposition groups that led to other fatalities and the capture of other members of the group.

(f) The two soldiers interviewed by the FFM were the only ones who managed to flee the scene.

3.72 The FFM was not able to identify a cohesive narrative based on the testimonies of these particular casualties. Additionally, the FFM could not corroborate this narrative with the prevailing narrative established by the analysis of the testimonies from the bulk of interviewees. The authorities of the Syrian Arab Republic did provide footage from an open source which purported to describe the aftermath of this incident (see Table 3, Number 7). However, the FFM could not establish a firm link between this footage and the alleged incident.

3.73 The FFM sought further clarification regarding this reported incident by requesting to re-interview a relevant witness during its second deployment. The FFM was not able to establish further facts regarding this incident upon reviewing the testimony of the witness.

Analysis of Information Provided to the Fact-Finding Mission in the Form of Documents and Services

3.74 The information and services provided by the authorities of the Syrian Arab Republic assisted the FFM in clarifying the following:

(a) The document entitled "Report of Colonel Commander of Brigade 358 for Special Missions on the Exposure of a Group of Soldiers from the Brigade to the Inhalation of Toxic Gases" offered a brief description of the alleged incident that took place on 29 August 2014 in Jober (referred to in Note Verbale 150). This document provided an overview of the incident. The information in the report included the mission assigned to the Brigade involved, the starting point, the location and number of explosions that occurred on this date, a description of the smell of the explosion (reported as chlorine-like, according to witnesses), a brief description of the device (a locally made device), the firing point of devices (according to the firing sound), the number of soldiers affected by two devices that exploded later on, the evacuation route taken by the soldiers, and brief mention of treatment, rest, and recuperation.

(b) The images from Google Earth® provided by the authorities of the Syrian Arab Republic detailing key locations related to the reported incident in Jober on 29 August 2014 assisted the FFM in identifying the position of the casualties involved on the day of the event. The images point out locations where the soldiers were before, during and after the incident (see Annex 4).

(c) Medical records which are described in the Medical Report attached to this document.

Analysis of Alleged Incident in Al-Maliha on 16 April 2014

Interview Analysis

3.75 The FFM encountered difficulties in establishing a prevailing narrative for the reported incident as only two witnesses were interviewed. The following describes the most cohesive recall of the events:

(a) It is apparent that a military operation occurred on 16 April 2014, in the vicinity of Al-Maliha, Damascus (referred to in Note Verbale 150). In this military operation, a group of eight soldiers from the Syrian Arab Army was assigned to either clear a tunnel or breach an area of houses where they discovered a tunnel. This tunnel was the scene of the ensuing incident.

(b) One of the interviewees reported to have been inside the tunnel and closer to the alleged release and the other reported to have been outside the tunnel.

(c) The location was identified by both interviewees on a satellite map, though the tunnel is not visible on said map, nor was any photograph of the tunnel presented. There was no description of the diameter of the tunnel and its length was estimated to be 37 metres.

(d) Following a short period of small arms fire between the interviewees group and a group of "armed men", the incident occurred between 14:00 and 14:30. The interviewees did not see the "armed men" but they were thought to be located at the other end of the tunnel. At this time some of the interviewees' team members, as well as one interviewee, were in the tunnel.

(e) Audible descriptions of the alleged chemical release are as follows: a sound that was described as "not as loud as a normal explosion", "something discharging in air", "an explosion from afar", and "a bursting water balloon."

(f) Neither interviewee reported seeing the causative object nor any shrapnel, remnants, or any other indications that it was a munition. Neither did the interviewees see any resulting cloud or other indications of a chemical release.

(g) The smell was described as being very disagreeable, like that of corpses or rotting flesh.

(h) All eight team members experienced immediate symptoms described by both interviewees as nausea, sore throat, headache, breathing difficulty, eye irritation, and decreased level of consciousness.

(i) The affected soldiers assisted one another in retreating from the impact area and received general supportive care at a forward medical point, established

at the Air Defence Administration building. Subsequently, the soldiers were evacuated by ambulance to the Al-Radi Hospital for basic cleaning and supportive care and then further to a military hospital some distance away (Hospital 601).

(j) In hospital, decontamination and supportive care continued for the affected soldiers, including oxygen, intravenous fluids, and medications. Blood samples were taken and diagnoses were non-specific. The interviewees stated that the casualties were discharged from the hospital a few days following the incident, in good health.

3.76 The FFM encountered difficulties in establishing a prevailing narrative for this incident since there were only two interviewees, whose individual narratives departed from one another. The following are some points of departure between the interviews and documents provided:

(a) The descriptions of the mission objective, the tunnel location and entrance, and incursion distance into the tunnel.

(b) The witnesses' testimonies, the report from Al-Radi hospital, medical records from Hospital 601, and Note Verbale 150 provide conflicting information regarding the number of casualties. The details are as follows:

(i) While Note Verbale 150 states that there were five resulting casualties, the interviewees and the report from Al-Radi Hospital refer to eight affected casualties from this incident.

(ii) Al-Radi Hospital reports that four of the casualties were admitted, whilst four were further transferred to Hospital 601. However, Hospital 601 provided documents indicating the receipt of five patients.

(iii) The Record of Injuries provided by Al-Radi Hospital states that the incident occurred "around eight in the evening", whilst interviewees state that the incident occurred around 14:30.

Analysis of information provided to the FFM in the form of documents and services

3.77 The information and services provided by the Syrian authorities assisted the FFM in clarifying the following:

(a) The document entitled "Report of Colonel assigned to run Administrative Unit 270" offered a brief description of the alleged incident that took place on 16 April 2014 in Al-Maliha, Damascus. This document provided information including date, location, synopsis, and list of reported casualties. There were eight casualties named. The causative object is stated as having been a "bomb (…) releasing an unknown gas".

(b) Al-Radi Hospital provided a list of received casualties, which included an incident narrative and a record of which patients were treated and monitored at that location (four patients) and which ones were transferred to Hospital 601 (four patients). This report helped to better account for the movement of casualties through the three stated medical points in light of the lack of available interviewees and the differing casualty numbers from provided sources.

(c) Hospital 601 reported receiving five patients from this incident and provided medical records (five patients) and AChE reports (four patients), including the casualties' names. The medical records provided information on medical assessment and treatments.

(d) The images from Google Earth® provided by the Syrian authorities detailing key locations related to this incident assisted the FFM in identifying the location of the reported attack and the first medical point. The images also point out locations where the soldiers were during the incident. The GPS coordinates given by both interviewees are consistent with these images.

Analysis of Alleged Incident in Al-Maliha on 11 July 2014

Interview Analysis

3.78 The prevailing narrative established by the review of all interviews related to this alleged incident is as follows:

(a) It is apparent that on 11 July 2014, the Syrian Arab Army forces were conducting routine operations battling opposition forces in Al-Maliha, Damascus, adjacent to a pharmaceutical factory. These operations involved a group of 10 soldiers supported by medical response personnel.

(b) An alleged chemical incident occurred between 00:00 and 01:00 on 11 July 2014. The interviewees reported having heard a small explosion that differed from their experience with conventional weapons.

(c) After the dull sound, the interviewees reported experiencing a strong smell similar to cleaning products.

(d) The group of affected soldiers reportedly experienced signs and symptoms that included coughing, tearing of the eyes, suffocation, nausea, and unconsciousness.

(e) Following the onset of signs and symptoms, the affected soldiers self-evacuated to the field medical point approximately 800 metres away, from which they were transported to Al-Radi Hospital for further treatment.

(f) Those with the most severe signs and symptoms were transferred to Hospital 601 for continuing treatment; those with moderate symptoms were treated at Al-Radi and released back to the unit within a day.

3.79 The FFM encountered some difficulties in establishing a prevailing narrative for this incident, since there were only four interviewees, whose individual narratives at times departed from one another. The following are some points of departure between the interviews and the documents provided:

(a) There are conflicting reports on the number of casualties caused by the alleged chemical weapon(s) incident. One interviewee reports that only 5 to 7 of the 10 were affected but survived, whereas others report fatalities among the casualties. These witness statements contradict medical records and Note Verbale 150, neither of which mention fatalities.

(b) Distances and impact points were only reported by two interviewees for this incident, and differed considerably from one another. All other interviewees were unable to describe where the causative object came from or where it impacted. This lack of corroboration made it difficult for the FFM to establish a clear narrative of the events on that day.

3.80 The FFM was able to identify a general narrative based on the testimonies of these particular casualties and witnesses, but was unable to positively confirm any specific toxic chemical event.

Analysis of information provided to the FFM in the form of documents and services

3.81 The information and services provided by the Syrian authorities assisted the FFM in clarifying the following:

(a) The document entitled "Report of the Commander of the Battalion 177 Mechanized Infantry, report dated 11/08/2014" offered a brief description of the reported incident that took place on 11 July 2014 in Al-Maliha (referred to in Note Verbale 150). This document provided a general overview of the incident. The information in the report included the mission assigned to the battalion involved, the approximate starting point, and a description of the detonation of the suspected device. The report also describes signs and symptoms of the casualties and hospitals involved in the treatment of the injured.

(b) The images from Google Earth® provided by the Syrian authorities detailing key locations related to this incident assisted the FFM in identifying the position of the individuals involved on the day of the event. The images point out locations where the soldiers were placed, key infrastructure of the area, the medical point, and hospitals.

(c) The list of casualties admitted to the Hospital 601 on 11 July 2014 and Al-Radi on 12 July 2014 as a result of inhaling an unknown toxic gas. This particular report departs from the interviewee narrative that the alleged incident took place on 11 July 2014 and all casualties were taken to the hospital and admitted on the same day.

Analysis of Alleged Incident in Al-Kabbas on 10 September 2014

Interview Analysis

3.82 The FFM encountered difficulties in establishing a prevailing narrative for this incident as only three witnesses were interviewed, one of whom was a nurse located at the medical point some distance from the impact point. The following describes the most cohesive recall of the events:

(a) It is apparent that on 10 September 2014, Syrian Arab Army forces were conducting routine operations battling opposition forces in Al-Kabbas, Damascus, near a paint factory. These operations involved a group of 10 soldiers supported by medical response personnel.

(b) A chemical incident occurred between 04:30 and 05:00. The interviewees reported having heard a "small" or "low sound" explosion.

(c) After this "small" or "low sound" the affected soldiers experienced the smell of something similar to cleaning products.

(d) These soldiers then experienced signs and symptoms that included coughing, tearing of the eyes, suffocation and in one case, nausea.

(e) Following the onset of signs and symptoms, the affected Syrian Arab Army soldiers self-evacuated to the field medical point approximately 300 metres away, where they received a hasty decontamination with water and were transported to Al-Radi Hospital for further treatment.

(f) Those with the most severe signs and symptoms were transferred to Hospital 601 for further treatment; those with moderate symptoms were treated at Al-Radi and released back to their unit.

3.83 The FFM encountered some difficulties in establishing a prevailing narrative for this incident since there were only three interviewees, whose individual narratives at times departed from one another. The following are some points of departure between the interviews and the documents provided:

(a) One of the interviewees for this incident reported the day of the attack as 11 September 2014, which was inconsistent with other reporting and Note Verbale 150, placing the date as 10 September 2014.

(b) Distances and impact points were only reported by one interviewee for this incident. The absence of supporting statements makes this description a singular account and not contributory to a prevailing narrative.

(c) There are conflicting reports among all sources on the number of casualties. Interviewed soldiers reported two to three casualties, Medical Responder personnel reported upwards of 15, Note Verbale 150 and the hospital admissions list mention six, and the "Report for Colonel, Commander of Battalion 408 Armoured on the Doukhaniya Incident on 10/9/2014" mentions only one.

3.84 The FFM was able to identify a general narrative based on the testimonies of these particular casualties and witnesses, but was unable to positively confirm any specific toxic chemical event.

Analysis of information provided to the FFM in the form of documents and services

3.85 The information and services provided by the Syrian authorities assisted the FFM in clarifying the following:

(a) The document entitled "Report for Colonel, Commander of Battalion 408 Armoured on the Doukhaniya Incident on 10/9/2014" offered a brief description of the incident that took place on 10 September 2014 in Al-Kabbas. This document provided a general overview of the incident. The information in the report included the mission assigned to the Battalion involved, the approximate starting point, and a description of the detonation of the suspected device. The report also describes signs and symptoms of the soldiers and hospitals involved in the treatment of those injured.

(b) The images from Google Earth® provided by the Syrian authorities detailing key locations related to the incident in Al-Kabbas on 10 September 2014 assisted the FFM in identifying the position of the individuals involved on the day of the event. The images point out locations where the soldiers were placed, key infrastructure, medical point, and hospitals.

(c) List of casualties admitted to the 601 Hospital.

Analysis of Alleged Incident in Nubel and Al-Zahraa on 8 January 2015

Interview Analysis

3.86 The prevailing narrative established by the review of all interviews related to this incident is as follows:

(a) Following three days of intense bombing, on 8 January 2015 between 13:00 and 17:00, five mortars allegedly landed in the neighbourhood referred to locally as the Al-Joud association, located in the region of Nubel and Al-Zahraa towns (Aleppo Governorate).

(b) The interviewees were all members of the local popular committee, which is an armed group, tasked by local dignitaries with defence of the immediate area and critical infrastructure.

(c) Witnesses described having intercepted radio communications alerting them to the possibility of toxic chemical attacks. Such communications were also broadcast via the mosque.

(d) All witnesses described the causative objects as 120 mm improvised mortars.

(e) Witnesses described a yellow smoke or dust cloud appearing after the objects' impact. The description of the formation and dissipation of this smoke or dust cloud varied between witnesses.

(f) Some witnesses described the smoke or dust cloud as having a smell consistent with "chlorine and cleaning detergents".

(g) The described smoke or dust cloud reportedly caused symptoms in up to seven individuals. Symptoms included decreased level of consciousness and were otherwise consistent with acute, non-specific irritation of the mucosa and respiratory tract.

(h) Casualties were evacuated to the medical point and transported to the local field hospital (Kawthar school) for further evaluation. Treatment included oxygen, inhalers, intravenous fluids, and hydrocortisone at the field hospital before transport to Al-Zahraa Hospital for follow-up treatment.

(i) Two witnesses returned to one of the impact points after the incident and reported seeing disintegrated remnants of the causative object with fins still intact. One of these witnesses noted a residue, described as "fertiliser" or "red snow", leaking out of the object. This residue reportedly liquefied when touched and re-solidified "after a period of time".

3.87 The FFM identified a few discrepancies in the prevailing narrative. The main points of this discrepant narrative are the following:

(a) The total number of casualties resulting from the incident varied between interviewees; ranging from three to 15. Additionally, there are discrepancies in the number of casualties reported by Al-Zahraa hospital (5 cases) and Note Verbale 41 (17 cases).

(b) According to Note Verbale 47, the munitions employed in the incident were "missiles", whereas all interviewees reported the causative objects as improvised 120 mm mortars.

3.88 The FFM was able to identify a cohesive narrative based on the testimonies of these particular casualties and witnesses, but is unable to positively confirm any specific toxic chemical event due to the lack of physical evidence, samples from the site, or remnants of a suspected explosive device.

Analysis of information provided to the FFM in the form of documents and services

3.89 The information and services provided by the Syrian authorities assisted the FFM in clarifying the following:

(a) Medical report from Al-Zahraa Hospital containing the names of five individuals treated after the attacks. A report regarding the incident registered in the police station of Nubul describing the event.

(b) Identification documents for a number of casualties.

(c) Images from Google Earth® detailing key locations related to the incident include impact points, locations of witnesses at the time of the incident, key infrastructure, hospital, and medical point. The GPS coordinates given by interviewees are consistent with these images.

Analysis of Alleged Incident in Darayya on 15 February 2015

Interview Analysis

3.90 The prevailing narrative established by the review of all interviews related to this incident is as follows:

(a) It is apparent that some form of military engagement occurred on 15 February 2015, in the described area of Darayya, Damascus. In this reported military engagement, a group of five to eight soldiers from the Syrian Arab Army was supporting friendly forces. These soldiers were located 50 to 100 metres north-west of the Shrine of Sukayna, in and around a partially destroyed two-storey building.

(b) The incident occurred around noon. The interviewees stated that they were under fire from various weapons and were unable to determine from which device the alleged chemical release originated. Some interviewees reported noticing a smell of burning nylon and observing dead or dying rats, which were described as shivering and screaming before dying. No other visual, auditory or olfactory descriptions were given, nor was any interviewee able to bear witness to a specific impact or discharge.

(c) During the battle, the interviewed soldiers reported that they suddenly started experiencing various symptoms such as blurred vision, teary eyes, runny nose, dizziness, headache, breathing difficulties, mild fatigue, and nausea.

(d) The affected soldiers assisted one another in retreating from the impact area and received general supportive care at a forward medical point before being evacuated by ambulance to a military hospital some distance away (Hospital 601).

(e) In hospital, supportive care continued for the affected soldiers including oxygen and inhaled, intraocular, and intravenous medications. Treatments were varied according to the patients' requirements but included salbutamol, hydrocortisone, HI-6, and atropine. Blood samples were taken and diagnoses were non-specific. However, four casualties were reported as having inhaled some gas. Casualties reported leaving the hospital between one and twelve days following the incident, in good health.

(f) One interviewee reported delayed symptoms of secondary exposure after helping to evacuate a casualty from the scene of the incident.

3.91 The FFM identified departures from the prevailing narrative and documents provided:

(a) There are some discrepancies between the documents provided and interviews as to which soldiers were admitted to the hospital on which days. However, the total number of hospital-treated soldiers over the three-day period in question is consistent between documents and testimonies.

(b) Some affected soldiers explained they did not report to the hospital until one or two days following the incident as they felt that they needed to stay at the site of the battle and that their colleagues required priority treatment.

(c) The medical personnel interviewed by the FFM provided conflicting accounts of patient admission and movement between the emergency department and wards in Hospital 601.

Analysis of information provided to the FFM in the form of documents and services

3.92 The information and services provided by the Syrian authorities assisted the FFM in clarifying the following:

(a) The document entitled "Report of the Commander of the Unit Working in the Darayya during the First Darayya Incident on 15/02/2015" offered a brief description of the incident. This document provided information including date, location, synopsis, and list of reported casualties.

(b) The images from Google Earth® provided by the Syrian authorities detailing key locations related to this incident assisted the FFM in identifying the location of the reported attack, the referenced Shrine of Sukayna, and the first medical point. The images point out locations where the soldiers were before, during, and after the incident. The GPS coordinates given by some interviewees are consistent with these images.

(c) The list of patients admitted to Hospital 601 between 15 and 17 February 2015.

(d) Medical records, AChE reports from a document entitled "Blood AChE Activity in Syrian Soldiers: 2013 – 2015" and a compendium of reported casualty symptoms and treatment, including the casualties' names, were provided by the Syrian authorities. The information collected from these documents is described in the Medical Report attached to this document.

(e) The Syrian authorities provided the FFM with access to blood samples reportedly taken from the casualties of the incident. The FFM sealed the samples, with a view to possible future analysis in a location outside the Syrian Arab Republic. The FFM deployed to the Syrian Arab Republic for the third time to retrieve the sealed blood samples and to obtain DNA samples, with the intention of establishing a link between casualties and the above-mentioned blood samples (see Annex 8).

(f) The sample analyses were conducted by the Netherlands Forensics Institute (DNA analysis) and an OPCW designated laboratory. Both laboratories submitted their complete reports on 27 November 2015 and a summary of findings can be found in Annex 8.

(g) The result of DNA analysis established a link between the blood samples collected and casualties for this incident. The results of the biomedical testing indicate evidence of sarin (or sarin-like agent, for example, chlorosarin) intoxication in all tested samples collected from casualties.

(h) Though the analysed blood samples did indicate an exposure to sarin or a sarin-like substance, the analysis did not indicate a specific date of exposure, nor a specific time that the blood was drawn. Through DNA sampling, the FFM was able to link the blood samples to the reported casualties; however, the FFM is unable to verify the chain of custody between the time the blood was drawn from the casualties and the time that the samples were sealed by the FFM.

3.93 The blood sample analysis indicates that four individuals were at some point exposed to sarin or a sarin-like substance. The FFM is unable to link the analysis results to the incident described in Notes Verbales 41 and 47.

3.94 The FFM considers that the immediate notification to the OPCW that a suspected chemical attack had occurred would have allowed the prompt deployment of the FFM to gather primary evidence and establish the facts surrounding this incident.

Analysis of the Alleged Incident in Al-Maliha on 8 July 2014

3.95 There were no witnesses available to provide testimonies related to this alleged incident.

Analysis of information provided to the FFM in the form of documents and services

3.96 The information and services provided by the Syrian authorities assisted the FFM in clarifying the following:

(a) The document entitled "Report of the Commander of the Battalion 177 Mechanized Infantry – incident of Al-Maliha (08/07/14), dated 11/08/2014." offered a brief description of the incident. This document provided information including date, time, the approximate starting point, a description of the detonation of the suspected device, and a list of reported casualties. The report also described signs and symptoms of the casualties and hospitals involved in the treatment of those injured.

(b) The list of casualties admitted to the Al-Radi Hospital on 8 July 2014 as a result of inhaling an unknown toxic gas.

(c) Images from Google Earth® detailing key locations related to the incident include impact points, locations of witnesses at the time of the alleged incident, key infrastructure, hospital, and medical point.

Analysis of the Alleged Incident in Jober on 16 April 2014

3.97 There were no witnesses available to provide testimonies related to the reported incident.

Analysis of information provided to the FFM in the form of documents and services

3.98 The following information and services were provided by the Syrian authorities to the FFM:

(a) AChE report indicating the results from 10 casualties from Note Verbale 150.

(b) Admissions list from Hospital 601 containing 10 casualty names, of which nine were admitted.

(c) Medical records.

3.99 The FFM was unable to corroborate the information provided on these documents as none of the casualties were presented for interview.

Analysis of the Alleged Incident in Al-Maliha on 2 July 2014

3.100 There were no witnesses available to provide testimonies related to the reported incident.

Analysis of information provided to the FFM in the form of documents and services

3.101 The following information and services were provided by the Syrian Authorities to the FFM: medical records for 5 casualties from Hospital 601.

3.102 The FFM was unable to corroborate the information provided on these documents, as none of the casualties were presented for interview.

Analysis of the Alleged Incident in Darayya on 15 August 2014

3.103 There were no witnesses available to provide testimonies related to the reported incident.

Analysis of information provided to the FFM in the form of documents and services

3.104 The following information and services were provided by the Syrian authorities to the FFM:

(a) Admissions list from Hospital 601 containing eight casualty names, of which four were admitted.

(b) Medical records.

3.105 The FFM was unable to corroborate the information provided on these documents, as none of the casualties were presented for interview.

Analysis of the Alleged Incident in Jober on 4 September 2014

3.106 There were no witnesses available to provide testimonies related to the reported incident.

Analysis of information provided to the FFM in the form of documents and services

3.107 The following information and services were provided by the Syrian authorities to the FFM:

(a) Admissions list from Hospital 601 containing five casualty names, of which one was admitted.

(b) Medical records.

3.108 The FFM was unable to corroborate the information provided on these documents, as none of the casualties were presented for interview.

Analysis of the Alleged Incident in Al-Kabbas on 18 September 2014

3.109 There were no witnesses available to provide testimonies related to the reported incident.

Analysis of information provided to the FFM in the form of documents and services

3.110 The following information and services were provided by the Syrian authorities to the FFM:

(a) Admissions list from Hospital 601 containing seven casualty names, of which two were admitted.

(b) Medical records.

3.111 The FFM was unable to corroborate the information provided on these documents, as none of the casualties were presented for interview.

4. CONCLUSIONS

FACT-FINDING MISSION: MANDATED AIMS

Gather facts regarding the incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon, as detailed in the correspondence No. 150, dated 15 December 2014, No. 41, dated 29 May 2015, No. 43, dated 3 June 2015, No. 47, dated 15 June 2015, received from the Syrian Arab Republic, mindful that the task of the FFM does not include the question of attributing responsibility for the alleged use.

Alleged incident in Jober, Damascus, on 29 August 2014

4.1 The FFM is of the opinion that it would have been able to be more precise in its findings if further objective evidence, complementing what was provided by the authorities of the Syrian Arab Republic, had been made available to the team. The FFM was not able to obtain hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the FFM from gathering further facts in a definitive way. Evidence such as those listed below would have been crucial for the FFM in establishing facts with a higher degree of confidence:

(a) Photographic or video recordings of the incident;

(b) A visit to the site where the incident took place;

(c) Detailed medical records including, inter alia, X-rays, pulmonary function tests, and timely blood laboratory values. Further details are described in the Medical Report annexed to this report;

(d) Timely biomedical samples from the patients;

(e) Remnants of any ordnance, launching system, or other forensic evidence retrieved from the location of the incident;

(f) Unfired ordnance similar to that used in the incident;

(g) Environmental samples from the surroundings of the location of the incident, including background samples;

(h) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system; and

(i) Comprehensive witness testimonies generated at the time of the incident.

4.2 Such evidence would have also been valuable in corroborating the testimonies of the casualties and witnesses interviewed by the FFM.

4.3 Therefore, based only on the interviews that were carried out and the documents that were reviewed, the FFM is of the view that the soldiers who were interviewed may have been exposed to some type of non-persistent, airborne irritant secondary to the surface impact of two launched objects. However, based on the evidence presented by the Syrian Arab Republic, the medical records that have been reviewed, and the prevailing narrative of all of the interviews, the FFM cannot confidently determine whether or not this potential irritant was produced by factors, including but not limited to:

(a) A chemical payload contained in the launched objects;

(b) A combustion product of a propellant;

(c) The detonation of a conventional or improvised explosive device on a stored chemical already in-situ;

(d) A mixture of detonation products with surface soil and dust; or

(e) Some combination of all of the factors mentioned above.

4.4 Furthermore, the FFM is of the view that while the general clinical presentation of those affected in the incident is consistent with brief exposure to any number of chemicals or environmental insults, the visual and olfactory description of the potential irritant does not clearly implicate any specific chemical.

Alleged Incident in Al-Maliha, Damascus, on 16 April 2014

4.5 The FFM is of the opinion that it would have been able to establish facts related to this alleged incident in an independent and unambiguous manner had further objective evidence, complementing what was provided by the authorities of the Syrian Arab Republic, been made available to the team. The FFM was not provided with hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the FFM from gathering facts in a definitive way. Evidence such as those listed below would have been crucial for the FFM to establish facts with a higher degree of confidence:

(a) Photographic or video recordings of the incident;

(b) More witnesses (only two provided for an incident involving eight soldiers);

(c) Visit to the site where the incident took place;

(d) Detailed medical records, including, inter alia, X-rays, pulmonary function tests, and timely blood laboratory values. Further details to this are in the attached Medical Report;

(e) Remnants of any ordnance, launching system or forensic evidence retrieved from the incident location;

(f) Unfired ordnance similar to that used in the incident;

(g) Environmental samples from the surroundings of the incident location, including background samples;

(h) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system; and

(i) Comprehensive witness testimonies generated at the time of the incident.

4.6 Such evidence would have been valuable to corroborate the testimonies of the casualties and witnesses interviewed by the FFM.

4.7 Therefore, based only on the interviews carried out and documents reviewed, the FFM is of the view that the two interviewed soldiers may have been exposed to some type of non-persistent, irritating airborne substance, secondary to the surface impact of a launched or thrown object. However, through the evidence presented by the Syrian Arab Republic, the medical records reviewed and the prevailing narrative of both interviews, the FFM cannot confidently determine whether or not this potentially irritating substance was produced by factors including but not limited to:

(a) A chemical payload contained within the launched or thrown object;

(b) A combustion product of a propellant;

(c) Detonation of a conventional or improvised explosive device on a stored chemical already in-situ;

(d) Air quality in the confined space of the tunnel;

(e) A mixture of detonation products with surface soil and dust; and

(f) Some combination of all factors mentioned above.

4.8 Furthermore, the FFM is of the view that, while the general clinical presentation of those affected in the incident is consistent with a brief exposure to any number of chemical or

environmental insults, the visual and olfactory description of the potential irritating substance does not clearly indicate any specific chemical.

Alleged Incident in Al-Maliha, Damascus, on 11 July 2014

4.9 The FFM is of the opinion that it would have been able to establish facts related to this alleged incident in an independent and unambiguous manner had further objective evidence, complementing what was provided by the Syrian authorities, been made available to the team. The FFM was not provided with hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the FFM from gathering facts in a definitive way. Evidence such as those listed below would have been crucial for the FFM to establish facts with a higher degree of confidence:

(a) Photographic or video recordings of the incident;

(b) Visit to the site where the incident took place;

(c) Detailed medical records including, inter alia, X-rays, pulmonary function tests, and blood laboratory values. Further details are provided in the attached medical physicians' contribution;

(d) Timely biomedical samples from the patients;

(e) Remnants of any ordnance, launching system, or other forensic evidence retrieved from the incident location;

(f) Unfired ordnance similar to that used in the incident;

(g) Environmental samples from the surroundings of the incident location, including background samples;

(h) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system;

(i) Comprehensive witness testimonies generated at the time of the incident; and

(j) A greater sample of witness testimonies.

4.10 Such evidence would have been valuable to corroborate the testimonies of the casualties and witnesses interviewed by the FFM.

4.11 Therefore, based only on the interviews carried out and documents reviewed, the FFM is of the view that the interviewed soldiers may have been exposed to some type of non-persistent, irritating airborne substance, secondary to the surface impact of the launched objects. However, through the evidence presented by the Syrian authorities, the medical records

reviewed, and the prevailing narrative of the interviews, the FFM cannot confidently determine whether or not this potentially irritating substance was produced by factors including but not limited to:

(a) A chemical payload contained within the launched objects;

(b) A combustion product of a propellant;

(c) Detonation of a conventional or improvised explosive device on a stored chemical already in-situ;

(d) A mixture of detonation products with surface soil and dust;

(e) Dispersion products of chemicals present in or around the pharmaceutical factory; and

(f) Some combination of all factors mentioned above.

4.12 Furthermore, the FFM is of the view that, while the general clinical presentation of those affected in the incident is consistent with a brief exposure to any number of chemical or environmental insults, the visual and olfactory description of the potential irritating substance does not clearly indicate any specific chemical.

Alleged incident in Al Kabbas, Damascus, on 10 September 2014

4.13 The FFM is of the opinion that it would have been able to establish facts related to this incident in an independent and unambiguous manner had further objective evidence been available to the team, complementing what was provided by the Syrian authorities. The FFM was not provided with hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the FFM from gathering facts in a definitive way. Evidence such as those listed below would have been crucial for the FFM to establish facts with a higher degree of confidence:

(a) Photographic or video recordings of the incident;

(b) Visit to the site where the incident took place;

(c) Detailed medical records including, inter alia, X-rays, pulmonary function tests and blood laboratory values. Further details are provided in the attached medical physicians' contribution;

(d) Biomedical samples from the patients;

(e) Remnants of any ordnance, launching system, or forensic evidence retrieved from the incident location;

(f) Unfired ordnance similar to that used in the incident;

(g) Samples from remnants of cylinders or other containers alleged to have been used in the incident and retrieved from the incident location;

(h) Environmental samples from the surroundings of the incident location, including background samples;

(i) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system; and

(j) Comprehensive witness testimonies.

4.14 Such evidence would have been valuable to corroborate the testimonies of the casualties and witnesses interviewed by the FFM.

4.15 Therefore, based only on the three interviews carried out and documents reviewed, the FFM is of the view that the interviewed soldiers may have been exposed to some type of non-persistent, irritating airborne substance, secondary to the surface impact of launched objects. However, through the evidence presented by the Syrian authorities, the medical records reviewed and the prevailing narrative of the interviews, the FFM cannot confidently determine whether or not this potentially irritating substance was produced by factors including but not limited to:

(a) A chemical payload contained within the launched objects;

(b) A combustion product of a propellant;

(c) Detonation of a conventional or improvised explosive device on a stored chemical already in-situ;

(d) Dispersion products of chemicals present in or around the paint factory;

(e) Some combination of substances mixed with surface soil and dust; and

(f) Some combination of all factors mentioned above.

4.16 Furthermore, the FFM is of the view that, while the general clinical presentation of those affected in the incident is consistent with a brief exposure to any number of chemical or environmental insults, the description of the potential irritating substance does not clearly indicate any specific chemical.

Alleged incident in Nubel and Al-Zahraa on 8 January 2015

4.17 The FFM is of the opinion that it would have been able to establish facts related to this incident in an independent and unambiguous manner had further objective evidence been available to the team, complementing what was provided by the Syrian authorities. The FFM was not provided with hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the

FFM from gathering facts in a definitive way. Evidence such as those listed below would have been crucial for the FFM to establish facts with a higher degree of confidence:

(a) Photographic or video recordings of the incident, or impact site;

(b) Visit to the site where the incident took place;

(c) Detailed medical records including, inter alia, X-rays, pulmonary function tests, and blood laboratory values. Further details are provided in the attached medical physicians' contribution;

(d) Biomedical samples from the patients;

(e) Remnants of any ordnance, launching system, or forensic evidence retrieved from the incident location;

(f) Unfired ordnance similar to that used in the incident;

(g) Samples from remnants of cylinders or other containers alleged to have been used in the incident and retrieved from the incident location;

(h) Environmental samples from the surroundings of the incident location, including background samples;

(i) Comprehensive contemporaneous incident reports generated by the chain of command and the medical system;

(j) Comprehensive witness testimonies generated at the time of the incident; and

(k) A greater sample of witness testimonies.

4.18 Such evidence would have been valuable to corroborate the testimonies of the casualties and witnesses interviewed by the FFM.

4.19 Therefore, based only on the interviews carried out and documents reviewed, the FFM is of the view that the interviewed soldiers may have been exposed to some type of non-persistent, irritating airborne substance, secondary to the surface impact of the launched objects. However, through the evidence presented by the Syrian authorities, the medical records reviewed, and the prevailing narrative of all interviews, the FFM cannot confidently determine whether or not this potentially irritating substance was produced by factors including but not limited to:

(a) A chemical payload contained within the launched objects;

(b) A combustion product of a propellant;

(c) Detonation of a conventional or improvised explosive device on a stored chemical already in-situ;

(d) Some combination of substances mixed with surface soil and dust; and

(e) Some combination of all factors mentioned above.

4.20 Furthermore, the FFM is of the view that, while the general clinical presentation of those affected in the incident is consistent with a brief exposure to any number of chemicals or environmental insults, the visual and olfactory description of the potential irritating substance does not clearly indicate any specific chemical.

Alleged incident in Darayya on 15 February 2015

4.21 In order to further establish facts related to this incident in an independent and unambiguous manner, the FFM is of the opinion that further information should preferably have been made available to the team, complementing what was provided by the Syrian authorities. The following actions and information would have been useful to corroborate the testimonies of the casualties and witnesses interviewed by the FFM and to establish the value of the evidence supplied:

(a) Immediate notification to the OPCW that a suspected chemical attack had occurred would have allowed the prompt deployment of the FFM to gather primary evidence and establish the facts surrounding this incident;

(b) Photographic or video recordings of the incident;

(c) Visit to the site where the incident took place;

(d) Detailed medical records including, inter alia, X-rays, pulmonary function tests, as well as timely and complete blood laboratory values. Further details are provided in the attached Medical Report;

(e) Remnants of any ordnance, launching system, or forensic evidence retrieved from the incident location;

(f) Unfired ordnance similar to that used in the incident;

(g) Environmental samples, including animal tissue, from the surroundings of the incident location as well as background control samples;

(h) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system;

(i) Comprehensive witness testimonies generated at the time of the incident; and

(j) A greater sample of witness testimonies.

4.22 Based on the interviews carried out, the documents reviewed, and the results of blood sample analyses (Annex 9), the FFM is of the opinion that there is a high degree of probability that some of those involved in the alleged incident in Darayya on 15 February 2015 were at some point exposed to sarin or a sarin-like substance. However, the FFM could not confidently link the blood sample analyses to this particular incident nor determine how, when, or under what circumstances the exposure occurred.

Report to the Director-General upon conclusion of FFM Activities

4.23 The FFM has concluded its activities as mandated by the Director-General for its first deployment and hereby submits this report for consideration.

Fact-Finding Mission: Operational Instructions

The inspection team shall establish the facts pertaining to two incidents in 2014 and one incident in 2015, as detailed and reported in the correspondence No. 150, dated 15 December 2014, No. 41, dated 29 May 2015, No. 43, dated 3 June 2015 and No. 47, dated 15 June 2015, taking into consideration the availability of suitable interviewees, representing, to the fullest extent possible, a cross-section of casualties, which may include first responders, medical personnel, and eye witnesses. [1]

The inspection team is instructed to:

Review and analyse all available information pertaining to reported incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon

4.24 Information that was made available by the Syrian Arab Republic pertaining to the reported incidents involving the alleged use of toxic chemicals and that was reviewed and analysed by the FFM can be found in the following sections of this report:

(a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities; and

(b) Second Deployment Activities, Interviews: Methodology and Activities.

[1] The opening paragraph of the FFM's Operational Instructions is applicable to the team's second deployment.

Collect testimonies from persons alleged to have been affected by the use of toxic chemicals, particularly chlorine, as a weapon, including those who underwent treatment, eye witnesses of the alleged use of toxic chemicals, particularly chlorine, medical personnel and other persons who have been treated or come into contact with persons who may have been affected by the alleged use of toxic chemicals, particularly chlorine

4.25 The methodology that the FFM employed and the activities it undertook in collecting testimonies from persons deemed relevant to the investigation into the alleged use of toxic chemicals, particularly chlorine, as a weapon, are found in the following sections of this report:

(a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities; and

(b) Deployment Activities, Investigation Activities, Interviews: Methodology and Activities.

4.26 In addition, details of the interview analysis methodology and the prevailing narrative of the testimonies obtained by the FFM are described in this report under the heading 'Data Analysis Methodology Employed by the Fact-Finding Mission'.

Where possible, and deemed necessary, carry out medical examinations, including autopsies, and collect biomedical samples of those alleged to have been affected

4.27 The FFM did not carry out medical examinations, including autopsies, due to the passage of time since the alleged incidents.

4.28 Biomedical samples collected by the Syrian Arab Republic in relation to the alleged incident of 15 February 2015 in Darayya were retrieved by the FFM and sent for analysis at an OPCW designated laboratory. A certified laboratory conducted DNA analysis to link the samples to the casualties.

4.29 Biomedical samples for other incidents listed in the applicable notes verbales were not available to the FFM.

If possible, visit the hospitals and other locations as deemed relevant to the conduct its investigations

4.30 The FFM visited the military hospital Martyr Youssef Al-Adhma on 27 May 2015 (see the section of this report under the heading 'First Deployment Activities, Advance Team Activities') and on 13 August 2015 (see the section of this report under the heading 'Second Deployment Activities, Investigation Activities'). In addition, the FFM visited the Centre for Studies and Scientific Research Institute in Barzi, Damascus, on 12 and 14 August 2015 (see the section of this report under the heading 'Second Deployment Activities, Investigation Activities').

Examine and, if possible, collect copies of, the hospital records including patient registers, treatment records, and any other relevant records, as deemed necessary;

4.31 During its first deployment, the FFM received copies of medical record for victims. They were reviewed, photographed, photocopied, documented as evidence, and analysed.

4.32 The FFM received various medical records and reports from Hospital 601 regarding the alleged incidents. Details about these records are provided in the Medical Report attached to this report.

Examine and, if possible, collect copies of any other documentation and records deemed necessary

4.33 Documentation and records that the FFM deemed necessary for the investigation, the dates when said documentation was provided, and a brief description of contents can be found in the following sections of this report:

(a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities; and

(b) Second Deployment Activities, Interviews: Methodology and Activities.

4.34 In addition, the analysis of information relevant to each alleged incident investigated by the FFM is described in this report under the heading 'Data Analysis'.

Take photographs and examine, and if possible collect copies of video and telephone records

4.35 The authorities of the Syrian Arab Republic provided copies of video and telephone records as described in the following sections of this report:

(a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities;

(b) Second Deployment Activities, Interviews: Methodology and Activities; and

(c) Annex 7.

If possible, and deemed necessary, physically examine and take samples from remnants of cylinders, containers, etc., alleged to have been used during the incidents under investigation

4.36 As described in the sections of this report under the headings 'First Deployment Activities, the Main Body of the Fact-Finding Mission', 'Requests for Information and Services: Methodology and Activities', and 'Second Deployment Activities, Interviews: Methodology and Activities', cylinders, containers, etc., alleged to have been used during the incidents under investigation were not available during the mission. Therefore, the FFM did not examine or take samples from these items.

If possible, and deemed necessary, collect environmental samples at the alleged points of incidents and surrounding areas

4.37 Due to the prevailing security situation, the FFM did not make any visits to the sites of alleged incidents and therefore could not recover any environmental samples.

Provide the Government of the Syrian Arab Republic with a duplicate or a portion of each environmental sample, if any, and, to the extent possible, a duplicate or portion of each of the bio-medical samples collected in the course of the Mission

4.38 The FFM collected 19 blood samples and four buccal swabs and prepared blood-spot cards from the 19 blood samples in preparation for DNA analysis. The FFM provided a duplicate of each of the bio-medical samples collected.

Cooperate fully with the relevant authorities of the Syrian Arab Republic with regard to all of the aspects of the Mission

4.39 The FFM maintained constant communication with the relevant authorities of the Syrian Arab Republic throughout its mission and cooperated with them on all aspects.

All activities of the FFM will be undertaken in accordance with the relevant Technical Secretariat procedures relating to the conduct of inspections during contingency operations, as applicable

4.40 The FFM performed its activities in observance of all applicable procedures related to contingency operations. A list of standard operating procedures and working instructions referred to by the FFM during its mission is referenced in Annex 8 of this report. In addition, the FFM maintained a list of deviations from standard procedures if certain procedures needed to be tailored to the FFM's activities, and included the reasons for any modifications.

5. SIGNATURE

5.1 This Fact-Finding Mission report was submitted on 14 December 2015 in English.

[Signed]
Steven Wallis
Mission Leader

Annex 1

MEDICAL REPORT ON THE ALLEGED USE OF CHEMICAL WEAPONS IN THE JOBER AREA OF DAMASCUS, SYRIAN ARAB REPUBLIC, ON THE 29TH OF AUGUST 2014

METHODOLOGICAL CONSIDERATIONS

1. In its investigation of incidents of alleged use of chemical weapons against the Syrian Arab Republic military, the mission focused on a reported incident in the Jober Area of Damascus on the 29th of August 2014. According to NV 150, this incident resulted in the treatment of 33 soldiers who collectively exhibited symptoms consistent with toxic or irritant inhalation. Interviews were conducted with 22 victims and 16 medical staff to elucidate further details and establish a clear narrative.

2. All information received, be it through witness statements, pictures, video, audio, patient records or other documentation, is recorded and registered for filing and archiving.

3. Methodology for interviews and documentation were consistent with well-established standard operating procedures (SOP's), developed and enforced by the OPCW and the WHO.

ETHICAL ISSUES AND CONSIDERATIONS

4. In conducting the interviews, full consideration was given to the privacy and protection of participants. All information gathered from interviews was kept confidential with the identity of each interviewee protected at all times. An identity number was assigned to each participant and this number was used for processing of data. The mission made all efforts to respect religious values and norms, national customs and the personal pressures and traumas associated with exposure to conflict.

COMPOSITION OF INTERVIEWEES

5. The 22 alleged victims presented by the Syrian National Authority to participate in the interviews had all been among the group of soldiers involved in an attack in the Jober Area of Damascus at around 6 pm on the 29th of August 2014. The average age was 25, with a range of 19 to 33. All were male and all were Syrian nationals of Arabic descent.

6. 8 treating physicians, 6 nurses, 1 medical assistant and 1 first responder were also interviewed; the majority of whom had participated in the care of the soldiers at the Martyr Yusuf Al Azama Hospital, also referred to as Hospital 601. Some medical interviewees had been stationed at al Abbassiyyin Hospital, a minimally equipped facility located in Jober where a number of soldiers received first aid and basic decontamination before being transported to the Hospital 601.

DETAILED INTERVIEWS WITH SOLDIERS

7. Interviews were conducted in two private rooms at the Sheraton Hotel in Damascus and were, in most cases, video and audio recorded. One interviewee did not accept video recording but accepted audio recording, one interviewee did not accept video or audio recording, but agreed to a written transcription facilitated by an interpreter.

8. The interviews followed a semi-structured format and aimed to extract a 'free recall' narrative of the events and their timeline, as well as details of actions taken by the individuals following impact, symptoms following exposure and the resulting actions and treatments performed by others. Recovery and possible long term effects were also discussed. Since some victims reported having fallen unconscious directly after the impact, the interview process was adapted to fit each perspective and extract the most pertinent information from each interviewee.

9. All soldiers reported a situation wherein they were attacked by two launched explosive devices whose impact produced a very bad smell. All 22 soldiers developed symptoms (see the chart below) with very short onset and varying degrees of severity. The victims who were exposed all recall that the gas had a particular odour which some compared to the smell of dead animals or corpses and others reported as similar to rotten eggs. Still others reported that they had never experienced anything similar before and couldn't compare the smell to anything.

10. About 1/3 of the victims lost consciousness on the site and can't recall how they were taken to the first-aid medical point or hospital. Others report that they were taken by military vehicles to al Abbassiyyin Hospital where some received a quick decontamination with water before being transported to Hospital 601 in an ambulance.

11. In Hospital 601 most reported being more thoroughly decontaminated with water and being given new clothes before receiving symptomatic treatment with oxygen, intravenous fluids and in some cases inhalation of β2 agonists such as salbutamol.

12. All admitted soldiers stayed at least one night in hospital, with 50 % reporting that they stayed more than one night before being discharged to their unit with orders to rest for a number of days. None reported any significant symptoms from the incident to the present day.

INTERVIEWS WITH MEDICAL STAFF

13. The interviews with treating physicians, nurses and first responders also followed a semi-structured format that built upon a 'free recall' wherein each interviewee relayed their specific memory of the event. Points for clarification followed the free recall and were aimed primarily at collecting information on observed symptoms, treatment provided and subsequent clinical progress. Particular focus was also on the presence or absence of secondary contamination from soldier to caregiver at any point during the rendering of first-aid, transport or definitive treatment in hospital.

14. Each were asked to describe the symptoms exhibited by the patients, either in transit (in cases of transporting medical staff) or on arrival to the Hospital 601 ED (see the chart below) as well as the development of these symptoms and the actions taken during evacuation and at the hospital. None of the medical staff interviewed reported noticing any particular smell from the victims and none reported any symptoms of secondary contamination.

15. Interviews with medical staff at the Hospital 601 revealed that the decontamination via removal of clothing and showering commenced before anyone was brought into the emergency department (ED). In the ED the patients received symptomatic treatment and then they were taken to different wards in the hospital where they all recovered quickly and were discharged on the following day or in some cases two days later.

REVIEW OF MEDICAL RECORDS

16. Medical records were presented to the FFM for a majority of the patients who came to be interviewed (19 out of 22). In most cases, records were received some days in advance which allowed for translation, copying for review and documentation.

17. These records were reviewed for demographics, clinical presentation, treatment, and admission duration and discharge status. The medical records were all very short, consisting of a bi-folded sheet of cardstock with a stapled addendum.

18. The submitted records were also reviewed during interviews with specific medical personnel when clarification was needed. A log book from the emergency department at Hospital 601 covering the patients treated on the 29th of August 2014 was also presented and documented by the FFM team.

19. In support of the presented symptoms during interviews a particular interest to the mission doctors were objective diagnostic information such as:

(a) Radiological reports (CT, MRI and X-ray)

(b) Pulmonary function test (PFT) results

(c) Laboratory analysis of blood, skin, sputum, urine, etc.

20. The records indicate that patients received symptomatic treatments such as:

(a) Oxygen,

(b) Nebulized salbutamol,

(c) Intravenous fluids (NaCl 0,9 %),

(d) Intravenous hydrocortisone (corticosteroid),

(e) Intravenous metoclopramide (antiemetic)

(f) An unidentified antihistamine which was referred to in the record, but whose specific name could not be translated.

21. In the medical records no information was found about laboratory tests, pulmonary function tests or x-ray results.

SYMPTOMS

22. In general, the symptoms described by the soldiers and those observed by the medical personnel are largely consistent and can be described as the following:

(a) Breathing difficulties 91 %

(b) Burning sensation in the eyes, blurred vision and lacrimation 77 %

(c) Nausea and vomiting 64 %

(d) Reduced consciousness 50 %

(e) Fatigue 35 %

(f) Excessive salivation / drooling 25 %

(g) Dry mouth 18 %

23. For a full report on symptoms described by victims, medical personnel, first responders and medical records see table below.

24. According to the bulk of interviewee recollections, the described symptoms occurred within a minute of exposure to an unknown gas having what was widely described as a 'very unpleasant' smell. Severity of reported symptoms appeared to be higher among those closest to the point where the reported munitions impacted the ground and the observed odour was produced.

25. For all soldiers taken to the hospital the recovery was very fast, most spending only one night in hospital for observation and supportive care. Some were granted several days leave upon discharge and all returned back to their units. None of the soldiers reported having been informed of a specific diagnosis upon discharge, none were prescribed any course of medication and none received any specific, post-exposure follow up instructions or tests.

26. Neither in interviews nor in medical records were any reports of foul smells emanating from the exposed, nor were there any reports of signs of secondary contamination among those who assisted or transported the victims.

COMPARISON OF RECORDS AND INTERVIEWS

27. Medical records were all quite repetitious in their description of symptoms and treatment. There is a significant discrepancy between the signs documented in the medical records, the signs recalled by medical staff and the symptoms recalled by the victims. The table below highlights the differences between these sources.

Symptoms as documented and described during the interview process by percent:

Symptoms	Symptoms Documented in Medical records	Symptoms Described by Victims During Interview	Symptoms Described by Medical staff During Interview
Tightness in chest	53	50	19
Dyspnoea, shortness of breath	32	41	58
Coughing	5	14	6
Excessive salivation	32	23	56
Running nose	21	36	12
Burning sensation in the eyes	89	64	62
Blurred vision	58	45	25
Lacrimation	42	54	38
Nausea	63	41	12
Vomiting	10	27	12
Fatigue	42	23	25
Headache	10	0	0
Dizziness	5	9	0
Disorientation	0	9	56
Loss of consciousness	0	36	12
Dry mouth	0	18	0

Airway symptoms

28. Interviewees reported different severities of breathing problems. Despite this no patient was in need of intubation or any other advance airway support. No patient was taken to the intensive care unit. As for the very specific symptom "Excessive salivation" only 25% of the victims

recall that they suffered from salivation and 18 % claim that they were suffering from dry mouth, at the same time more than 50 % of the medical staff recalls that the patients salivated excessively. This discrepancy is hard to explain.

Consciousness

29. While a considerable number of victims and medical personnel described symptoms like disorientation and loss of consciousness, these symptoms are not documented in the medical records. The medical personnel interviewed described many of the patients as disoriented and aggressive, while the medical records state that they were awake and responsive. The discrepancy between the victim's description of their status, the medical personnel's description of the patients' status and the medical records may indicate that there is a significant degree of amnesia among the alleged victims, or may challenge the reliability of the records themselves.

Recovery

30. For all alleged victims taken to the hospital the recovery was very fast. According to the written medical records, all patients were discharged back to their units after a 24 hour admission. This introduces a discrepancy between the story provided by the soldiers wherein 50 % of them report a hospitalization of two nights or more. It is unclear why the two sources of information do not agree.

Tests

31. Many of the interviewed soldiers and medical personnel recalled that objective medical tests such as blood sampling and chest x-rays were performed on the patients admitted to Hospital 601 on August 29th 2014. Nevertheless, none of the medical records submitted by the Syrian National Authority contained the results of any such diagnostic procedures. This significantly limits our ability to link the clinical picture presented by the patients, to the treatments delivered by the medical personnel, and ultimately, to compare all such findings to those expected after an exposure to a toxic chemical.

32. It is understood that Hospital 601 is operating under crisis conditions, and a sudden influx of a great number of patients displaying these symptoms may have complicated the process of documenting accurately. It must also be taken into consideration that the interviews were performed several months after the incident. In either case, the discrepancy complicates the fact-finding process and prevents the formulation of a confident clinical picture.

33. While it is not our aim to critique possible errors on behalf of fellow medical professionals, such inconsistencies are difficult to overlook when trying to establish a confident, scientifically valid, medical conclusion regarding the possible use of a toxic industrial chemical as a weapon.

CONCLUSION

34. The combined narratives relayed during the interviews suggest that there was an incident in Jober, Damascus on the 29th of August 2014 at about 6 pm. At that time, a group of approximately 33 Syrian Arab Republic soldiers were in proximity to the impact point of two launched objects which landed within a few minutes of one another. It is possible that upon impact, some kind of airborne irritant was produced which affected those standing close to the points of impact. The irritant appears to have produced significant and varied symptoms. The noted symptoms developed without delay but the effects had a short duration and resolved without antidotes or specific treatments. The described irritant had a very bad smell that most victims either did not recognize sufficiently to describe or were described as the smell of rotten bodies, dead animals, corpses and rotten eggs.

35. Since the incident took place nine months before the mission started, no bio-medical samples were taken and it's therefore very hard to establish which agent could have produced this combined olfactory signature, but some suggestions can be made from the described symptoms. One point that becomes clear when considering the total composition of interviews and medical records is that the substance affecting the soldiers on August 29th 2014 was not likely chlorine.

List of chemicals and the probability analysis:

Substance	Diborane	Hydrogen Fluoride	Boron Trifluoride	Hydrogen sulphide	Ammonia	Phosgene	Sulphur dioxide	Formaldehyde	Hydrogen bromide	Boron Trichloride	Organophosphate	Chlorine

High probability **Low probability**

36. The table of substances has been created in consideration of:

(a) Symptoms

(b) Onset and the duration of symptoms

(c) The need of specific antidotes or other specific treatments

(d) The appearance and the smell of the gas as described

(e) Secondary contamination

(f) Long term effects

37. According to the description provided by the soldiers the devices which released the chemical substance were detonated outside which indicates that the substance must be highly toxic in order to obtain the concentration needed to cause these dramatic symptoms.

38. As for chlorine, it has a well-known smell recognizable at very low concentration (0,1 - 0,3 ppm) and should most likely have been identified by some of the victims. Neither are the symptoms those of chorine exposure.

39. As for sarin (GB) or other organic phosphoric compounds (OPs), the smell would not be consistent with the unpleasant signature of rotting corpses or eggs, since the smell of sarin is most frequently described as a sweet smell of apple or pear. The symptoms would likewise be different and there would almost certainly be secondary contamination among first responders and medical staff. Finally, the victims would be affected far more severely and for a much longer duration if exposed to sarin or other OPs especially if no specific antidote was given.

40. Of particular interest is the possibility of the soldiers having been exposed to diBorane, which in addition to being traditionally used as a rocket propellant, in the electronic industries and is also used in the vulcanization of rubber, making it both relevant to the interests of a militarized non-State actor, and also readily available in the region. It is a substance which could be causative of most of the presented symptoms and is associated with a rapid recovery without any antidotes or specific treatments when patients are removed to fresh air. While diBorane is highly toxic, it is non-persistent, volatile and would not likely cause secondary contamination.

41. As far as the olfactory signature is concerned, the smell of diBorane is described in research literature as having a repulsive, sickly sweet odour which could very well be compared to the smell of rotting dead bodies.

42. Our list of potential chemical agents is presented for reference and consideration but should not be considered a conclusion, as the objective evidence required to reach confidence is lacking in this case. With respect to the questions proposed in the mandate, it is the opinion of the mission that the substance most likely attributable to the clinical presentations described in the interviews and records is not chlorine or sarin.

43. This medical report is hereby submitted on 29 June 2015.

MEDICAL REPORT ON THE ALLEGED USE OF CHEMICAL WEAPONS IN THE SYRIAN ARAB REPUBLIC, THE FFM/03-B/15 (SECOND DEPLOYMENT)

METHODOLOGICAL CONSIDERATIONS

1. In its investigation of the alleged use of chemical weapons against the Syrian Arab Republic military groups the medical team focused on five different incidents described in the mandate.

2. All information received, be it through witness statements, pictures, video, audio, patient records or other documentation, is recorded and registered for filing and archiving with the United Nations.

3. Methodology for interviews and documentation were consistent with well-established standard operating procedures (SOPs), developed and enforced by the OPCW and the WHO.

4. Access to interviewees was the responsibility of the Syrian authorities and was dependent on each individual's availability and if it was possible to arrange transportation to the interview location. Relevant medical staff were also presented for interviews depending on availability.

ETHICAL ISSUES AND CONSIDERATIONS

5. In conducting the interviews full consideration was given to the privacy and protection of participants. All information gathered from interviews was kept confidential with the identity of each interviewee protected at all times. An identity number was assigned to each participant and this number was used for processing of data. The mission made all efforts to respect religious values and norms, national customs and the personal pressures and traumas associated with exposure to conflict.

DETAILED INTERVIEWS WITH SOLDIERS

6. Interviews were conducted in two private rooms at the designated location in Damascus and were, in most cases, video and audio recorded. One interviewee did not accept video recording but accepted audio recording.

7. The interviews followed a semi-structured format and aimed to extract a 'free recall' narrative of the events and their timeline, as well as details of actions taken by the individuals following impact, symptoms following exposure and the resulting actions and treatments performed by others. Recovery and possible long term effects were also discussed. Since some victims reported having fallen unconscious directly after the impact, the interview process was adapted to fit each perspective and extract the most pertinent information from each interviewee.

INTERVIEWS WITH PHYSICIANS, NURSES AND FIRST RESPONDERS

8. Interviews were conducted with treating physicians and nurses who participated in the care of the alleged victims at the Al Radi Hospital or at Martyr Yusuf Al Azama Hospital, also

referred to as Hospital 601. In addition to hospital based medical staff, the FFM team interviewed one physician stationed at a medical point near Darayya, one Military Medic staffing a medical point close to Al-Maliha and one Military Medic staffing a separate medical point in Darayya. Military medics were responsible for first aid and transportation of victims to hospital. The interviews followed a semi-structured format and were designed to collect information on the symptoms presented by the soldiers, treatment provided and subsequent clinical progress. Focus was also on the presence or absence of secondary contamination.

REVIEW OF MEDICAL RECORDS

9. Medical records were presented to the medical team for most patients who came to be interviewed. In most cases the mission received the records some days in advance to allow for translation and duplication for archival. Some additional medical records for patients not available for interviews were also submitted by the Syrian authorities. These records were reviewed by the medical team for any noteworthy points.

10. The following alleged incidents were investigated during the FFM/003-B/15 mission:

(a) The alleged incident in **Jober** on August 29 2014, the report from this incident is presented separately but will be referred to in this report.

(b) The alleged incident in **Darayya** on February 15 2015 which resulted in the treatment of 8 affected soldiers. Interviews were conducted with seven alleged victims and 10 medical personnel).

(c) The alleged incident at **Al-Zahraa** on January 8 2015 which resulted in the treatment of five individuals. Interviews were conducted with two alleged victims, one medic and one witness.

(d) The alleged incident near or in the tunnel in the **Al-Maliha** area on April 16 2014, two alleged victims were interviewed.

(e) The alleged incident in the proximity of a pharmaceutical factory in the **Al-Maliha** region on July 2014, four alleged victims and one Military Medic were interviewed.

(f) The alleged incident near the paint factory and the **Al-Kabbas** Bridge on September 2014, two alleged victims and one Military Medic were interviewed.

Darayya Area of Damascus 15 February 2015

Interviews with soldiers

11. The SAR Authorities presented seven individuals to offer testimony with respect to an alleged chemical attack in the Darayya Area of Damascus at 12.30 pm on

15 February 2015. All of the individuals presented were male soldiers of varying rank in the SAR military, with an age range of 19 to 36 and an average age of 25.

12. The interviewees reported a situation with heavy bombing where a device exploded in a house occupied by six soldiers.

13. After the reported explosion, the interviewees described symptoms such as breathing difficulties, blurred vision and headache with a delayed onset of 5 to 30 minutes, which some interviewees believed to be related to a chemical substance released from an explosive device.

14. While some interviewees described a smell of burning nylon, none witnessed any physical properties of this alleged chemical substance/gas. Another soldier who heard his colleagues in distress from some distance away, responded to this location and subsequently reported being exposed to the potential chemical insult.

15. The affected soldiers were taken to a nearby medical point for brief washing and basic assistance such as oxygen, before being transported to Hospital 601 for treatment.

16. In Hospital 601, all were decontaminated with water and were given new clothing before receiving further treatment with oxygen, IV fluids, medication and in some cases nebulizers. While none of the patients interviewed could recall the name of any medications administered, some recalled that medications were given by intramuscular injection.

17. None of the patients could remember any X-rays done at any time during the admission.

18. All patients were admitted to a medical ward, one of the victims decided to leave the hospital on the second day while the rest of them stayed for 10 to 12 days.

19. All described a slow recovery and extreme fatigue. They also describe impaired vision, some expressing the sensation of photophobia while others describe a situation where they felt like it was dark around them. All of them described a rather severe head ache often located to the frontal aspect of the head. Some experienced the sensation of numbness in the limbs.

20. After discharge, all were granted a release period of at least one week in order to rest and recover. None had any significant symptoms from the incident to today.

Interviews with medical personal

21. Interviews were conducted with five treating physicians and four nurses who had participated in the care of the victims in Hospital 601. One doctor stationed at the medical point in Darayya to where the victims first were taken before being transported by ambulance to the Hospital 601 was also interviewed.

22. After decontamination the victims were taken into the emergency department (ED). According to the ED doctors standard blood tests were taken, basic physical examination was performed and vital signs monitored.

23. None of the interviewed recalled that any special blood tests were taken or that a result from any special blood examination (i.e. Acetylcholinesterase activity) was reported.

24. The patients received symptomatic treatments such as; oxygen, inhalation of salbutamol, intravenous fluids (NaCl 0.9 %), intravenous hydrocortisone, intravenous anti-emetics and intravenous antihistamine as needed.

25. Most patients suffered some form of breathing difficulty but no patient was in need of intubation and no patient was taken to the intensive care unit.

26. Some doctors reported having administered atropine, but none of the interviewed recalled having given pralidoxime or HI-6 even though some doctors informed us that they had heard about "others" giving this kind of medication.

27. One doctor, a specialist in pulmonary diseases, examined the patients due to their general complaint of breathing difficulties. According to this interviewee there were no pathological findings on auscultation but that several of the patients had chest X-rays done. The interviewee informed us that the results of the X-rays were normal and that he had seen them himself, however there is no information about X-ray investigation in the medical records.

Medical records

28. Medical records were presented for eight victims from the alleged incident, out of which seven were interviewed. These records were reviewed for demographics, clinical presentation, treatment, admission time and discharge summary. The medical records were all very short and standardized in their description of symptoms and treatment.

29. The records presented to the medical team on the second deployment were different from the charts presented to us during the first deployment. It is possible that this is due to the patients being kept in hospital for a significantly longer period of time. Within the body of interviews and the various medical records submitted, the medical team identified some discrepancies with regard to timing of interventions.

30. According to medical notes, some patients were treated with:

(a) Oxygen

(b) Hydrocortisone

(c) Inhalation of Salbutamol

(d) Atropine

(e) Pralidoxime

(f) HI-6.

31. The medical team could not identify an obvious correlation between signs and symptoms and the treatment provided.

32. After receiving symptomatic treatment in the ED most patients were taken to a special ward for respiratory problems (thoracic ward), while one patient was initially placed in the gastrointestinal department due to limited bed space. While there is some conflicting information between the medical records and interviews, it appears that after the first night, all patients from the alleged incident were kept together for the rest of the admission, with the exception of one person who decided to leave the hospital on his own responsibility and did so after one night.

33. In the medical records, documentation of routine blood results can be found at various points from the time the patients were hospitalized. There is, however, no discernible pattern to when these test were taken. They appear on different dates and different times, with no suggestion as to why the specific tests were ordered at each particular time. While some intriguing Acetyl-Cholinesterase (AChE) values from a separate laboratory were noted, those values appear at odd points in the admission timeline. At the time of this writing, the medical team is still awaiting results from the re-evaluation of those samples. Otherwise, no blood tests showed any pathological results.

34. Records indicate that some patients were seen by an ophthalmology specialist. The note from this consultation states the presence of miosis but otherwise no other pathological findings. Patients were prescribed some eye drops according to medical chart.

35. A number of patients experiencing the sensation of numbness in the limbs were seen by a neurologist, no pathological findings are documented.

Visit to the Hospital 601

36. While visiting the Hospital 601 the medical team met the 'Specialist Doctor' in the emergency department whom, according to the interviews with medical staff, has the distinct responsibility of prescribing HI-6 and Pralidoxime when indicating cases are admitted. Through our discussions, this Doctor could not present any protocol for the use of this class of medication and also seemed very uncertain about the indications for their use.

37. No information could be given on where these drugs are produced, how they are handled, prepared or administered.

38. No X-ray images could be presented from this incident since all images are removed from the system after 2 months due to the limited computer capacity.

Symptoms

39. One of the soldiers advised he developed symptoms after helping the soldiers from the incident to the medical point. This could possibly be a case of secondary contamination, but since none of the interviewees could positively identify a point of impact, it could be primary

exposure as well. None of the medical staff recalled any special smell from the victims and none of the medical staff experienced any symptoms of secondary contamination.

40. The symptoms described by the victims and by the medical personnel show some similarities, the most common symptoms are: Blurred vision, pin-point pupils/miosis, shortness of breath with cough, head ache and fatigue. The table below gives a more precise presentation of symptoms.

Darayya incident: The described symptoms are presented in the following chart:

Symptoms	Symptoms described by Victims %	Symptoms described by Medical staff %
Tightness in chest	14	0
Dyspnoea, shortness of breath	**57**	**100**
Coughing	0	86
Excessive salivation	0	0
Running nose	43	0
Burning sensation in the eyes	0	0
Blurred vision	**100**	57
Red eyes	0	71
Pin point pupils, miosis	0	**100**
Lacrimation	43	43
Nausea	14	57
Vomiting	28	0
Fatigue	14	57
Headache	**86**	**71**
Dizziness	71	57
Loss of consciousness	0	0

41. There were some discrepancies noted between the symptoms reported by the patients and the symptoms documented by the medical staff.

Conclusion

42. Taking all signs and symptoms into consideration and considering that the patients were affected for an extended period of time it is remotely possible that the alleged victims could have been exposed to an Organic Phosphorus (OP) compound, for example a pesticide, however it is difficult to identify an OP pesticide that tightly matches the presentation seen.

43. The fact that none of the medical staff could recall that bloods were taken for the analysis of Acetylcholinesterase activity, that no documentation was found in the medical records about these tests and the fact that the test results were presented to us in a separate document complicates the fact-finding process and prevents the formulation of a confident clinical picture. The results from the analysis of Acetylcholinesterase activity were significantly outside of the expected range and should have resulted in a different treatment regime.

44. The treatment with HI-6, Pralidoxime and Atropine did not follow any identifiable protocol and therefore may have been given rather late after the exposure. The information in the medical records do not give a clear explanation for this treatment. The patients appear to have recovered even without this specific treatment, which casts some doubt on the idea that it was ever indicated in the first place. Given these points, and considering the disposition of the blood samples currently being re-evaluated, the medical team cannot express any confidence at this time that a chemical agent was used in this incident.

Al-Zahraa January 8 2015

Interviews with Local Popular Committee

45. According to the information provided to the medical team, five people were injured on this occasion with two of the five victims presented by the SAR Authorities to participate in the interviews.

46. The injured had all been part of a local popular committee defending the town of Al-Zahraa on the 8th of January. One interviewee reported that he was exposed to some gas released from a bomb that fell within an area with houses and the other interviewee reported that he was exposed to a gas released when a bomb exploded near a factory building.

47. Those involved in this alleged incident described a dense cloud with a yellow colour and a strong smell of cleaning products, a smell they all identified as "chlorine and cleaning detergents".

48. Both interviewees experienced respiratory problems and burning sensation to eyes and nose, followed by blurred vision and severe shortness of breath, after which they lost consciousness.

49. The alleged victims were taken to the local field hospital. At this location, one patient required emergency amputation due to severe trauma to the leg. The other patient had no recall of the events surrounding his admission as he was unconscious. This patient regained consciousness

on the following day and was discharged after two or three days. Neither patient had fully recovered when they left the hospital; both were still suffering from breathing difficulties.

Interviews with Military Medics and civilian witness

50. One Military Medic and one civilian witness were interviewed.

51. Despite the use of a homemade mask constructed from fabric and charcoal, the Military Medic interviewed experienced symptoms such as breathing difficulties and eye irritation and had to advance very slowly to allow the gas to dissipate before he could reach the injured. When the interviewee managed to reach the injured man, who by then was unconscious, he rendered aid in the form of assisted breathing via oxygen and ambu-bag.

52. After reportedly seeing the described 'yellow cloud' the civilian witness went to the field hospital where he saw the alleged victims. According to his testimony, he noticed that the victims were having small pupils and red eyes.

53. The field hospital described had very limited resources and could only treat the victims with oxygen, IV fluids, hydrocortisone, dexamethasone and atropine.

54. The Military Medic interviewed did not know if Atropine had been given on this occasion and could not describe its indications. He stated that for inhalation of gases a combination of Hydrocortisone and Dexamethasone was given IV already in the field.

Medical record

55. No medical records were available from this incident.

Symptoms

56. Some witnesses described the smoke or dust cloud as having a smell consistent with "chlorine and cleaning detergents".

57. The symptoms described by all interviewees included respiratory problems and a burning sensation to the eyes and nose. Some described blurred vision and severe shortness of breath and some of the victims lost consciousness.

Conclusion

58. From the interviewees' statements, the medical team cannot rule out the possibility of an exposure to a toxic substance or gas. Some of the descriptions relayed in the interviews are consistent with what would be expected in an event involving any number of industrial chemicals. That said, the lack of medical documentation associated with this alleged incident, along with the limited volume of information yielded from medical staff interviews, makes identification of a pathological process unique to any specific chemical insult, very difficult.

Al-Maliha April 16 2014

Interview with soldiers

59. The SAR Authorities presented two individuals to offer testimony relating to an alleged incident occurring on the 16th of April in the region of Al-Maliha. The interviewed subjects were soldiers in the SAR military tasked on operations in the area. According to their testimonies, they were exposed to some gas subsequent to clearing a tunnel.

60. One of the soldiers interviewed was located within the tunnel at the time of the alleged incident, whilst the other was located just outside the tunnel entrance. Neither was able to describe any cloud or vapour and both had problems describing the smell of the gas. One soldier suggested that the smell was very awful, a "weird smell", or the smell of a dead corpse.

61. Both interviewees reported suffering from burning eyes, blurred vision, runny nose, nausea, shortness of breath and fatigue. One of the soldiers describes falling unconscious while being evacuated from the site and later regaining consciousness when at hospital.

62. The soldiers from the incident were evacuated to the hospital where they were given symptomatic treatment as well as some kind of intramuscular medication.

63. Both soldiers recovered quickly and were discharged after 2 days.

Symptoms

64. The symptoms described by the victims are burning eyes, blurred vision, runny nose, nausea, shortness of breath and fatigue. The recovery was quick.

Conclusion

65. While the interviewees were able to recall their symptoms and certain details about their activities, neither could relay any clear description of sights or sounds that could clearly associate with a chemical munition. Furthermore, the description of the smell resulting from the alleged incident was inconsistent between the two. The symptoms noted were significant, but resolved quickly with minimal intervention.

66. It is noted that there are similarities between the symptoms experienced by the soldiers involved in the incident in Jober on the 29th of August 2014 and the symptoms experienced by the soldiers in this incident. As with the Jober incident however, the medical team is unable to reach a confident conclusion about what substance, if any, is attributable to the described symptoms.

Al-Maliha 11 July 2015, the pharmaceutical factory

67. Interview with soldiers

68. From this alleged incident, four soldiers were presented by the SAR Authorities to participate in the interviews. The interviewed had all been among groups of soldiers acting in the area of a pharmaceutical factory in the region of Al-Maliha on 11 July 2014.

69. During the course of military operations, the interviewees described having heard the sound of a small explosion, followed by a smell of cleaning products. As operations were at night, none reported having seen any cloud, mist or vapour.

70. The soldiers reported that after noticing the smell of cleaning products they started to experience respiratory problems and burning sensation to eyes and nose, followed by blurred vision and severe shortness of breath. Some of the soldiers reportedly lost consciousness.

71. The patients were taken to Al Radi hospital where they were briefly decontaminated. In hospital they still suffered from shortness of breath and coughing, blurred vision and lacrimation. They were given symptomatic treatments. While some of the more seriously affected were transferred to Hospital 601, most recovered overnight in Al Radi hospital and were discharged to have a five day brake to recover and rest. Some had breathing difficulties for several days and they suffered from fatigue.

Interview with Military Medic

72. One military medic was presented by the SAR Authorities to participate in the interviews.

73. The Military Medic who rendered first aid at the medical point reported breathing difficulties subsequent to the strong smell that he perceived to be evaporating from the victims clothes. The interviewee said that he had to leave the ones that were worst affected, the unconscious ones, because the smell around them was too intense and he could not come close enough to help them.

74. This interviewee also noticed that the driver of the armoured vehicle taking the injured from the site to the medical point was severely affected; however, this interviewee did not mention whether or not this driver had been involved in operations close to the alleged source, or if this was a case of secondary contamination.

Medical records

75. No medical records were available from this incident. The list of casualties admitted to Al Radi hospital on the 12 July 2014 includes a number of patients who had 'inhaled an unknown toxic gas', however, further information supporting this diagnosis was absent.

Symptoms

76. The symptoms described by all interviewees included respiratory problems and burning sensation to eyes and nose. Some described blurred vision and severe shortness of breath and some of the victims lost consciousness.

Conclusion

77. From the interviewees' statements, the medical team cannot rule out the possibility of an exposure to a toxic substance or gas. Some of the descriptions relayed in the interviews are consistent with what would be expected in an event involving any number of industrial chemicals. That said, the lack of medical documentation associated with this alleged incident, along with the limited volume of information yielded from medical staff interviews, makes identification of a pathological process, unique to any specific chemical insult very difficult.

Al-Kabbas 10 September 2015, the paint factory

Interview with soldiers

78. From this alleged incident, two soldiers were presented by the SAR Authorities to participate in the interviews. These soldiers had all been among a group of soldiers acting in the area of a paint factory in the region of Al Kabbas on 10 September 2014.

79. According to the interviewees, a 'low explosion' occurred during the course of military operations, followed by a smell of something similar to cleaning products.

80. The soldiers were taken to hospital where they were briefly decontaminated. The soldiers all suffered from shortness of breath and coughing, blurred vision and lacrimation. Both reported having been given symptomatic treatments, and both were discharged from hospital after two days and given five days rest.

Interview with Military Medic

81. One Military Medic was presented by the SAR Authorities to participate in the interviews. The Military Medic caring for the victims from this incident is the same individual that rendered aid during the alleged incident at Al-Maliha on 11 July 2014; he recalls that the two incidents were very similar.

Medical records

82. One medical record was presented. The document itself was very standardized and didn't contain any information about the physical status of the victim.

Symptoms

83. The symptoms described by all interviewees included a burning sensation to the eyes and nose. Some described blurred vision and severe shortness of breath.

Conclusion

84. It is possible that there was a release of a toxic chemical from a thrown or launched device on this occasion, but this suggestion is supported mostly by the fact that one person, the Military

Medic who was present at the incident in Al-Maliha in July 2014, recognised the smell, the signs and the symptoms. Nevertheless, the number of interviewed victims is very limited and the information obtained from them is also quite limited. Furthermore, no useful information could be obtained from the medical record. Attributing any specific chemical insult to this alleged incident is therefore very difficult.

MEDICAL DISCUSSION

85. The mission has now covered a number of incidents. The combined narratives relayed during the interviews, plus the volume of supporting medical documentation does not rule out the possibility of exposures to toxic substances. Some of the descriptions relayed in the interviews are consistent with what would be expected in an event involving any number of industrial chemicals. Likewise, many of the signs and symptoms noted by the various medical professionals interviewed are consistent with general irritation of the mucosa and respiratory tract, as would be expected in the event of a noxious exposure.

86. The medical team has heard descriptions of explosions, debris, burning tires, confined spaces, and damaged chemical infrastructure such as plastic, paint and pharmaceutical factories. Given the nature of war, the number of potential sources of noxious irritants in such environments are too numerous to quantify. Therefore, when presented with symptoms that are general in nature, the medical team cannot confidently isolate a likely source or agent.

87. A recurring theme throughout the interviews, which complicated the process of reaching a medical conclusion, is the subjectivity of the sense of smell. In the majority of cases, the narrative hinged on the description of a smell; be that the smell of corpses, cleaning products, burning nylon or odours simply described as "weird". By themselves, these descriptions can only serve as guides, or indications as to what their origins may be. The symptoms associated with these smells are likewise non-specific and therefore of low value when the line of investigation is aimed at fact-finding. Unfortunately, and particularly in the case of chlorine, there are no specific quantitative tests that can bridge the gap between speculation and fact. Therefore, in the majority of alleged incidents reviewed on the second FFM deployment, the medical team is unable to offer a confident conclusion through symptoms and smell alone.

88. The one alleged incident not limited to a general review of symptoms and the subjective analysis of smell was the incident in Darayya on 15 February 2014.

89. The Darayya incident was the only reviewed incident wherein the alleged victims had a prolonged recovery phase of 10-12 days. This departed from all other alleged incidents wherein recovery was rapid and rarely resulted in hospital observation for more than two nights. Darayya is also the only alleged incident wherein antidotes and specific treatments such as oximes and atropine were employed, or were even mentioned. Finally, and perhaps most notably, this was the only incident wherein blood analysis was performed with quantitative results noted in the medical records. Though such results are precisely the type of objective evidence the medical team would have preferred to have had in the aforementioned

incidents, in the case of Darayya the presented test results proved more confounding than helpful, as they were significantly outside of the expected range for such a scenario.

90. It was therefore necessary to recover the described blood samples and send them to an independent lab for further assessment. At the time of this writing, those results are still pending and therefore cannot contribute to our conclusion. This forces the medical team to base its findings purely on interview data and the submitted records, which in many cases are lacking given the understandable difficulties faced by the interviewees and our medical colleagues.

91. Hospitals in the Syrian Arab Republic are operating under crisis conditions which may complicate the process of documenting accurately. It must also be taken into consideration that the interviews were performed several months after the alleged incidents, making lapses in recall and lack of specificity completely understandable. Nevertheless, the discrepancies noted complicate the fact-finding process and prevent the formulation of a confident medical conclusion.

92. With respect to the questions proposed in the mandate, it is the opinion of the medical team that the substance(s) most likely attributable to the clinical presentations described in the interviews and records cannot be factually determined at the time of this writing.

Annex 2

EXTRACT FROM INTERVIEW ANALYSIS (JOBER INCIDENT – 29 AUGUST 2014)

Interview Compilation Table
FFM-Brave

DCN:		Substantive Responses (Out of 20)	Prevailing Narrative	Narrative Departures	Corroboration of Other Sources
Interviewee Role					
Pre-Incident					
Description of:	Task objective	19 (95%)	Prior to the event, the unit was either advancing or preparing to advance on a building or group of buildings held by an opposition group.	While references to a 'soap factory' were common, there was some disagreement with respect to how this factory figured into the operation. Some respondents noted it as an inconsequential landmark, others describe it as the unit's point of origin (U8)(S8)(Q10), others described it as an obstacle they had to navigate around while en route (P9)(R10), and still others describe it as the objective itself (F7)(I8).	N/A
	Starting point	20 (100%)	There is near consensus that the operation began in Jober, in the vicinity of the 'soap factory' and some 'Arabic style houses' of varying size.	Described distance from the soap factory at the outset of the operation varied from 30m (T8) to 300m (E8), with multiple variants. Some ambiguity noted as to whether or not the Arabic style houses were the target, or whether they were just part of the landscape (Q9).	Multiple image files on CD1 supplied by SAR indicate the soap factory at or near 33 30'N 36 19'E, however open source maps label the same structure as a 'meat market'. Another structure adjacent to this meat market may be the actual soap factory but no open sources can confirm this.
	Direction of Travel	10 (50%)	The most common direction noted was 'east', though most respondents did not relay any specific direction. The most prevalent general term was 'toward the target', though whether this was house to house (Y9), across a street (U9)(N9) or on the other side of the soap factory (P9) is not clear.	While there were a variety of movement descriptions (i.e. 'across the street vs. house to house') such variations may or may not be inconsistences. This is difficult to determine without a physical picture of the incident area.	N/A
	Method of Travel	13 (65%)	A clear majority of respondents report moving on foot at the time of the incident, though some mention having arrived at the point of origin by vehicle.	None of note.	N/A
	Group Composition	20 (100%)	The unit consisted of 30-35 men.	No departures on the total number, though the outlier narratives depart dramatically from the main body of soldier interviews.	The number of medical records submitted and the "Report of Commander- Brigade 358 - Special Units" match the prevailing narrative.
	Position of His Sub-Group	20 (100%)	The general picture is that of the 30-35 troops arranged in sub-groups (teams) of approximately 5-7 men per team. Responses indicate that some of the teams were inside buildings at the time of the incident and others were located around buildings or in the street (S11). The OIC of the unit places himself in the second floor of a building with two attendants, maintaining visibility on the area of operations (E12).	The combined responses create a complex picture that is difficult to clarify without precisely located buildings and streets, but this is not necessarily an inconsistency. Likewise, the tendency of multiple respondents describing themselves as having been in the "first group" (F12)(U12)(O24) or on the "front line" (J12) or "most advanced" (R12)(S12) supposes that each of these men was actually in the same, forward sub-group. While that is a difficult point to corroborate, it is not necessarily implausible. More challenging is the reconciliation of the OIC's description of his location (E12) vs. the several other descriptions of his location according to other interviewees (M12)(N12)(P12)(I11)(I20). The aforementioned suggests that the OIC was in a second floor observation position, while the others place him among the 30+ or with a sub-group.	N/A

Annex 3

LIST OF MATERIALS GATHERED DURING THE INTERVIEW PROCESS

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
1	01/06/2015	FFM/003/15/6181/032	20150601200001	Audio recording of interview	01 SD card
2			20150601200002	Video recording of interview	01 SD card
3			20150601200003	Drawing of alleged incident area (by interviewee)	01 page
4			20150601200004	Digital copy of medical records	01 SD card
5		FFM/003/15/6181/032	20150601200101	Audio recording of interview	01 SD card
6			20150601200102	Video recording of interview	01 SD card
7			20150601200103	Digital copy of medical records	01 SD card
8		FFM/003/15/6181/032	20150601200201	Audio recording of interview	01 SD card
9			20150601200202	Video recording of interview	01 SD card
10			20150601200203	Drawing of explosive (by interviewee)	01 page
11			20150601200204	Digital copy and hard copy of medical record	01 SD card / 03 pages
12		FFM/003/15/6181/032	20150601200301	Audio recording of interview	01 SD card
13			20150601200302	Video recording of interview	01 SD card
14			20150601200303	Digital copy and hard copy of medical record	01 SD card / 03 pages
15		FFM/003/15/6181/032	20150601200401	Audio recording of interview	01 SD card
16			20150601200402	Video recording of interview	01 SD card
17			20150601200403	Audio recording of interview	01 SD card
18			20150601200404	Digital copy of medical records	01 SD card
19	02/06/2015	FFM/003/15/6181/032	20150602200501	Audio recording of interview	01 SD card
20			20150602200502	Digital copy and hard copy of medical record	01 SD card / 3 pages
21			20150602200503	Video recording of interview	01 SD card
22		FFM/003/15/6181/032	20150602200601	Video recording of interview	01 SD card
23			20150602200602	Audio recording of interview	01 SD card
24			20150602200603	Digital copy of medical records	01 SD card
25		FFM/003/15/6181/032	20150602200701	Drawing of map and object (by interviewee)	02 pages
26			20150602200702	Video recording of interview	01 SD card
27			20150602200703	Audio recording of interview	01 SD card
28			20150602200704	Digital copy of medical records	01 SD card

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
29		FFM/003/15/6181/032	20150602200801	Audio recording of interview	01 SD card
30			20150602200802	Video recording of interview	01 SD card
31			20150602200803	Digital copy and hard copy of medical record	01 SD card / 3 pages
32	03/06/2015	FFM/003/15/6181/032	20150603200901	Audio recording of interview	01 SD card
33			20150603200902	Video recording of interview	01 SD card
34			20150603200903	Digital copy of medical records	01 SD card
35		FFM/003/15/6181/032	20150603201001	Audio recording of interview	01 SD card
36			20150603201002	Video recording of interview	01 SD card
37	06/06/2015	FFM/003/15/6181/032	20150606201101	Audio recording of interview	01 SD card
38			20150606201102	Video recording of interview	01 SD card
39			20150606201103	Digital copy of medical records	01 SD card
40		FFM/003/15/6181/032	20150606201201	Audio recording of interview	01 SD card
41			20150606201202	Video recording of interview	01 SD card
42			20150606201203	Drawing/marking of map (by interviewee)	04 pages
43	07/06/2015	FFM/003/15/6181/032	20150607201301	Video recording of interview	01 SD card
44			20150607201302	Audio recording of interview	01 SD card
45		FFM/003/15/6181/032	20150607201401	Audio recording of interview	01 SD card
46			20150607201402	Video recording of interview	01 SD card
47		FFM/003/15/6181/032	20150607201501	Video recording of interview	01 SD card
48			20150607201502	Audio recording of interview	01 SD card
49	08/06/2015	FFM/003/15/6181/032	20150608201601	Video recording of interview	01 SD card
50			20150608201602	Audio recording of interview	01 SD card
51		FFM/003/15/6181/032	20150608201701	Audio recording of interview	01 SD card
52			20150608201702	Video recording of interview	01 SD card
53	01/06/2015	FFM/003/15/6181/033	20150601400001	Drawing of map (by interviewee)	01 page
54			20150601400002	Audio recording of interview	01 SD card
55			20150601400003	Video recording of interview	01 SD card
56			20150601400004	Digital copy and hard copy of medical record	1 SD / 03 pages
57		FFM/003/15/6181/033	20150601400101	Drawing of map (by interviewee)	02 pages
58			20150601400102	Audio recording of interview	01 SD card
59			20150601400103	Digital copy and hard copy of medical record	01 SD card / 03 pages
60			20150601400104	Video recording of interview	01 SD card

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
61		FFM/003/15/6181/033	20150601400201	Drawing of map (by interviewee)	01 page
62			20150601400202	Audio recording of interview	01 SD card
63			20150601400203	Video recording of interview	01 SD card
64			20150601400204	Digital copy and hard copy of medical record	01 SD card / 03 pages
65		FFM/003/15/6181/033	20150601400301	Drawing of map (by interviewee)	01 page
66			20150601400302	Audio recording of interview	01 SD card
67			20150601400303	Video recording of interview	01 SD card
68		FFM/003/15/6181/033	20150602400401	Audio recording of interview	01 SD card
69			20150602400402	Video recording of interview	01 SD card
70			20150602400403	Digital copy and hard copy of medical record	03 pages / 1 SD card
71		FFM/003/15/6181/033	20150602400501	Audio recording of interview	01 SD card
72			20150602400502	Video recording of interview	01 SD card
73			20150602400503	Digital copy of medical records	01 SD card
74		FFM/003/15/6181/033	20150602400601	Video recording of interview (part 1)	01 SD card
75			20150602400602	Audio recording of interview	01 SD card
76	02/06/2015		20150602400603	Digital copy of medical records	01 SD card / 3 pages
77			20150602400604	Video recording of interview (part 2)	01 SD card
78		FFM/003/15/6181/033	20150602400701	Written Statement of the witness	04 pages
79			20150602400703	Digital copy of medical records	01 SD card
80		FFM/003/15/6181/033	20150602400801	Audio recording of interview	01 SD card
81			20150602400802	Video recording of interview (part 1)	01 SD card
82			20150602400803	Digital copy of medical records	01 SD card
83			20150602400804	Drawing of the alleged incident area (interviewee)	01 page
84			20150602400805	Video recording of interview (part 2)	01 SD card
85	03/06/2015	FFM/003/15/6181/033	20150603400901	Audio recording of interview	01 SD card
86			20150603400902	Video recording of interview	01 SD card
87			20150603400903	Digital copy of medical records	01 SD card
88		FFM/003/15/6181/033	20150603401001	Audio recording of interview	01 SD card
89			20150603401002	Video recording of interview	01 SD card

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
90	06/06/2015	FFM/003/15/6181/033	20150606401101	Video recording of interview	01 SD card
91			20150606401102	Audio recording of interview	01 SD card
92		FFM/003/15/6181/033	20150606401201	Video recording of interview	01 SD card
93			20150606401202	Audio recording of interview	01 SD card
94		FFM/003/15/6181/033	20150606401301	Video recording of interview	01 SD card
95			20150606401302	Audio recording of interview	01 SD card
96		FFM/003/15/6181/033	20150606401401	Video recording of interview	01 SD card
97			20150606401402	Audio recording of interview	01 SD card
98	07/06/2015	FFM/003/15/6181/033	20150607401501	Video recording of interview	01 SD card
99			20150607401502	Audio recording of interview	01 SD card
100		FFM/003/15/6181/033	20150607401601	Video recording of interview	01 SD card
101			20150607401602	Audio recording of interview	01 SD card
102		FFM/003/15/6181/033	20150607401701	Video recording of interview	01 SD card
103			20150607401702	Audio recording of interview	01 SD card
104	08/06/2015	FFM/003/15/6181/033	20150608401801	Video recording of interview	01 SD card
105			20150608401802	Audio recording of interview	01 SD card
106		FFM/003/15/6181/033	20150608401901	Video recording of interview	01 SD card
107			20150608401902	Audio recording of interview	01 SD card

Annex 4

IMAGES FROM THOSE PROVIDED BY THE SYRIAN ARAB REPUBLIC RELATED TO THE ALLEGED INCIDENTS

1. ALLEGED INCIDENT IN JOBER ON 29 AUGUST 2014

2. ALLEGED INCIDENT IN AL-MALIHA ON 16 APRIL 2014

Translation from top to bottom:
Untitled place mark
Al-Maliha
[Next to Red Crescent mark]: Medical point inside the Air Defence Administration (ADA)
[Next to the place mark]: ADA
Soldiers, Ambulance, Syrian Forces soldiers,
Terrorist armed groups' location

3. ALLEGED INCIDENT IN AL-MALIHA ON 11 JULY 2011

Translation from top to bottom:
Square: TEMICO Factory
White circles: Place mark
Soldier
Location mark: Main assembly point

4. ALLEGED INCIDENT IN AL-KABBAS ON 10 SEPTEMBER 2014

Translation from right to left:
AMEH Factory (paint factory)
Medical point

5. ALLEGED INCIDENT IN NUBEL AND AL-ZAHRAA ON 8 JANUARY 2015

1 سقوط قذيفة كلور - النبوه
2 سقوط قذيفة كلور - النبوه
سقوط قذيفة الكلور عدد 2
Image © 2015 DigitalGlobe
© 2015 Google
© 2015 Basarsoft
Image © 2015 CNES / Astrium
Google earth

Translation from top to bottom
Nubel, Aleppo, Aleppo Governorate, Syria
[Next to red dot]: Nubel
[Place mark]: Al-Zahraa, Aleppo Governorate, Syria
[Next to red dot]: Al-Zahraa
Location where a chlorine rocket landed – attack 1
[Next to place mark]: location were the 2 chlorine rockets landed
Location where a chlorine rocket landed – attack 2

6. ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015

Translation from top to bottom:
Medical Point
Two-storey building
Sayida Soukayna Shrine

Annex 5

ADMINISTRATIVE DATA

5.1 Name, precise location, address and geographical co-ordinates of the investigated area(s):

Damascus area, Syrian Arab Republic

5.2 Team Composition

First Deployment to Syrian Arab Republic – Advance Team

No.	Function	Speciality
1.	Steve Wallis, Team Leader	Advanced Health and Safety Specialist Inspector
2.	Health and Safety Officer	Advanced Health and Safety Specialist Inspector
3.	Chemical Demilitarisation Officer	Chemical Production Technologist
4.	Interview sub-team member, confidentiality Officer	Analytical Chemist Inspector

First Deployment to Syrian Arab Republic – the Main Body of the Fact-Finding Mission

No.	Function	Speciality
1.	Deputy Team Leader	Chemical Weapons Munition Specialist Inspector
2.	Interview sub-team member	Chemical Weapons Munition Specialist Inspector
3.	Interview sub-team Leader	Advanced Health and Safety Specialist Inspector
4.	Interview sub-team member, evidence management officer	Analytical Chemist Inspector
5.	Interview sub-team member	Technical Expert, Medical Doctor
6.	Interview sub-team member	Technical Expert, Medical Doctor
7.	Interpreter	N/A
8.	Interpreter	N/A
9.	Interpreter	N/A

Second Deployment to the Syrian Arab Republic

No.	Function	Speciality
1.	Steve Wallis, Team Leader	Inspector, Advanced Health and Safety Specialist
2.	Deputy Team Leader	Inspector, Chemical Weapons Munitions Specialist
3.	Interview sub-team member, evidence management officer	Inspector, Analytical Chemist
4.	Interview sub-team Leader	Inspector, Advanced Health and Safety Specialist
5.	Interview sub-team member	Inspector, Advanced Health and Safety Specialist
6.	Interview sub-team member, confidentiality Officer	Inspector, Analytical Chemist
7.	Interview sub-team member	Inspector, Analytical Chemist
8.	Interview sub-team member, team Logistics Officer	Inspector, Chemical Weapons Munitions Specialist
9.	Interview sub-team member	Technical Expert, Medical Doctor
10.	Interview sub-team member	Technical Expert, Medical Doctor
11.	Interpreter	N/A
12.	Interpreter	N/A
13.	Interpreter	N/A

Third Deployment to the Syrian Arab Republic

No.	Function	Speciality
1.	Team Leader	Inspector, Advanced Health and Safety Specialist
2.	Deputy Team Leader	Inspector, Analytical Chemist
3.	Interpreter	N/A

Annex 6

SEQUENCE OF EVENTS – DATES AND TIMES

	Event	Date
a	Receipt of Note Verbale 150 by the OPCW Secretariat, providing information on incidents of the alleged use of chlorine as a weapon	19/12/2014
b	Agreement on Terms of Reference for the OPCW Fact-Finding Mission	10/03/2015
c	Appointment of FFM mission leader, deputy mission leader and mission team	24/03/2015
d	FFM received consent to deploy from Syrian Arab Republic	20/05/2015
e	Deployment of FFM Advance Team to Syrian Arab Republic	25/05/2015
f	Deployment of FFM Main Body to Syrian Arab Republic	29/05/2015
g	Receipt of Note Verbale 41 by the OPCW Secretariat, providing information on incidents of the alleged use of toxic chemicals as a weapon	29/05/2015
h	Receipt of Note Verbale 43 by the OPCW Secretariat, providing information on incidents of the alleged use of toxic chemicals as a weapon	03/06/2015
i	Return of FFM Main Body to OPCW Headquarters	10/06/2015
j	Return of FFM Advance Team to OPCW Headquarters	15/06/2015
k	Receipt of Note Verbale 47 by the OPCW Secretariat, providing information on incidents of the alleged use of toxic chemicals as a weapon	15/06/2015
l	Second deployment of FFM to Syrian Arab Republic	01/08/2015
m	Return of FFM to OPCW Headquarters	16/08/2015
n	Third deployment of FFM to Syrian Arab Republic	13/10/2015
o	Return of FFM to OPCW Headquarters	16/10/2015
p	Submission of FFM interim report	22/10/2015
q	Receipt of report on the analysis of FFM samples returned by Team Bravo	27/11/2015
r	Submission of complete FFM report	

Annex 7

LIST OF OTHER DOCUMENTS PROVIDED BY THE SYRIAN ARAB REPUBLIC

Description of Record	Provided On	Comments
List of patients for interview	31/05/2015	Casualties from alleged incident in Jober 29/08/2014
Description of incident in Darayya on 22/12/2012	08/06/15	Description of an alleged incident which took place on 22/12/2012 in Darayya, which led to the death of seven soldiers after being exposed to a yellow gas
Intercepted Telecommunication Message on the Attack Against Ghanto	08/06/15	Transcription of text messages related to arrival of chlorine barrels to the Ghanto village
Hamah Radio Conversation	08/06/15	Transcription of radio conversation dated 30/05/14 about attacking Al-Lataminah
Report from Ministry of Water Resources	08/06/15	Report on the theft of stolen equipment and chlorine drums from water pumping units
Document about an individual belonging to the Al Nusra front	08/06/15	Biography and speech by an Al Nusra front individual
Articles and Media Reports on Chemicals in Syria	08/06/15	Various open source articles and news reports regarding chemical weapons in Syria and region
Video of various executions	12/08/2015	Unrelated to the FFM's investigation

Annex 8

REPORT ON THE ANALYSIS OF SAMPLES COLLECTED BY THE FFM

27 November 2015

Hugh Gregg, Head, OPCW Laboratory

Executive Summary

1. Samples collected by the FFM have been analysed by a laboratory (DNA analysis) and an OPCW designated laboratory. Both laboratories have submitted their complete reports.

2. The following table summarises the findings. No other scheduled chemicals, degradation products, or other adducts were observed.

ID	Date[2]	AntiC[3]	Patient[4]	Findings
AAHO8019NL	15-Feb-15	H	A	Evidence of sarin (or sarin-like agent, for example, chlorosarin) intoxication
AAHO8020NL	15-Feb-15	E		
AAHO8024NL	18-Feb-15	H		
AAHO8025NL	24-Feb-15	H		
AAHO8031NL	24-Feb-15	E		
AAHO8022NL	18-Feb-15	H	B	
AAHO8026NL	24-Feb-15	H		
AAHO8028NL	24-Feb-15	E		
AAHO8033NL	15-Feb-15	H	C	
AAHO8034NL	15-Feb-15	E		
AAHO8021NL	18-Feb-15	H		
AAHO8029NL	24-Feb-15	H		
AAHO8030NL	24-Feb-15	E		
AAHO8017NL	15-Feb-15	H	D	
AAHO8018NL	15-Feb-15	E		
AAHO8023NL	18-Feb-15	H		
AAHO8027NL	24-Feb-15	E		
AAHO8032NL	24-Feb-15	H		
AAHO8035NL	18-Feb-15	H	E	No findings

2 This is the date on which the sample was collected from the patient
3 Anticoagulant: H = Heparin, E = EDTA
4 Patient identified via DNA analysis

Narrative

3. The FFM collected 19 samples that had been collected at various times in February 2015. Eighteen of the samples are said to be from victims of a chemical attack, and one from a non-intoxicated person (blank sample). Buccal swabs were taken from the four individuals by the FFM. The FFM prepared blood-spot cards from the 19 samples in preparation for DNA analysis.

4. The samples were received at the OPCW Laboratory (LAB) on Friday, 16 October 2015. In accordance with instructions from the Director-General, the samples were first to have DNA analysis to ensure they were from the individual interviewed. The LAB sent the samples to a laboratory for DNA analysis on Tuesday, 20 October. The laboratory report arrived on Friday, 6 November. DNA analysis confirmed the blood samples corresponded to the individuals interviewed by the FFM-B team.

5. On Monday, 9 November, the blood samples were transferred to a designated laboratory (as selected by the Director-General) for analysis. As the amount of blood received was quite limited (< 1.5 mL for each sample), the full aliquot was sent to a single laboratory. The set of samples was not split into two sets for two different laboratory analyses (e.g. a set of 9 samples to laboratory A and 10 samples to laboratory B) to ensure the results among all 19 samples were consistent.[5] A draft of the final analytical report (239 pages) was received on Friday, 27 November.

6. All transfers of samples and materials were documented, and the chain of custody of all samples was maintained.

7. The OPCW designated laboratory was tasked as follows:

> **"Scope of Analysis**
>
> Please analyze these samples for the presence or absence of nerve agent adducts."

Results

8. The laboratory analysed the blood samples for nerve agent adducts. The compounds detected, including a methylphosphonate adduct to a peptide and the fluoride regeneration product, led to the conclusion of exposure to sarin, or a sarin-like compound.

9. The methylphosphonate adduct would be one of the expected adducts after intoxication with sarin or similar nerve agent. The analytical techniques[6] used for this peptide adduct include two different liquid chromatography-mass spectrometry techniques (one high resolution mass

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5 As different laboratories use slightly different techniques and different instrumentation, comparing individual results from two laboratories is problematic.

6 Phosphylated BuChE was isolated according to the method using Immuno Magnetic Separation as published by Sporty et al., (2010) Anal. Chem. 82(15):6593-6600.

spectrometry, one tandem mass spectrometry). In the event the amount of the adduct in the blood is low, then only one of the two analytical techniques has the sensitivity to determine if it is present.

10. A different, complementary technology for analysis is fluoride regeneration[7] followed by gas chromatography-tandem mass spectrometry. This technique was able to indicate that more isopropyl methylphosphonate was adducted to a protein in the blood. Note that the leaving group (fluorine in the case of sarin) cannot be determined. Sarin, or chlorosarin, would produce identical results. This technique is not as sensitive as the previously mentioned methods.

11. A sample identified with two or three techniques is considered positive. When a sample is identified with only one technique (likely due to low concentration of the adduct), that sample is indicative of exposure. Generally, more techniques reporting positive indicates more concentration of exposure.

12. The following table lists the detailed findings of each analysis.

ID	Date	AntiC	Patient	Findings[8]
AAHO8019NL	15-Feb-15	H	A	MPA adduct (2 techniques), Fl regen
AAHO8020NL	15-Feb-15	E		MPA adduct (2 techniques), Fl regen
AAHO8024NL	18-Feb-15	H		MPA adduct (2 techniques), Fl regen
AAHO8025NL	24-Feb-15	H		MPA adduct (2 techniques), Fl regen
AAHO8031NL	24-Feb-15	E		MPA adduct (1 technique), no Fl regen
AAHO8022NL	18-Feb-15	H	B	MPA adduct (2 techniques), Fl regen
AAHO8026NL	24-Feb-15	H		MPA adduct (2 techniques), Fl regen
AAHO8028NL	24-Feb-15	E		MPA adduct (2 techniques), Fl regen
AAHO8033NL	15-Feb-15	H	C	MPA adduct (1 technique), no Fl regen
AAHO8034NL	15-Feb-15	E		MPA adduct (1 technique), no Fl regen
AAHO8021NL	18-Feb-15	H		MPA adduct (2 techniques), Fl regen
AAHO8029NL	24-Feb-15	H		MPA adduct (2 techniques), no Fl regen
AAHO8030NL	24-Feb-15	E		MPA adduct (1 technique), no Fl regen
AAHO8017NL	15-Feb-15	H	D	MPA adduct (2 techniques), Fl regen
AAHO8018NL	15-Feb-15	E		MPA adduct (2 techniques), Fl regen
AAHO8023NL	18-Feb-15	H		MPA adduct (2 techniques), Fl regen
AAHO8027NL	24-Feb-15	E		MPA adduct (2 techniques), Fl regen
AAHO8032NL	24-Feb-15	H		MPA adduct (2 techniques), Fl regen
AAHO8035NL	18-Feb-15	H	E	No findings

[7] The fluoride reactivation method was performed according to the method published by Holland et al (2008), J. Anal Toxicol., 32:116-124.

[8] MPA adduct: aged sarin attached to peptide identified with 1 or 2 analytical techniques.
Fl regen = fluoride regeneration – remove unaged adduct and add fluorine to regenerate sarin.

Annex 9

DESCRIPTION OF THE RESULTS OF THE BLOOD SAMPLES ANALYSIS RELATED TO THE DARAYYA INCIDENT OF 15 FEBRUARY 2015

1. On 7 August 2015, the Syrian authorities submitted to the FFM the results of analyses related to acethylcholinesterase activity of the persons involved in Darayya incident on 15 February 2015.

2. According to this report, produced by the Centre for Studies and Scientific Research Institute in Barzi, Damascus, the blood samples were drawn in Hospital 601 on the different dates (depending on admission dates and duration of hospitalisation).

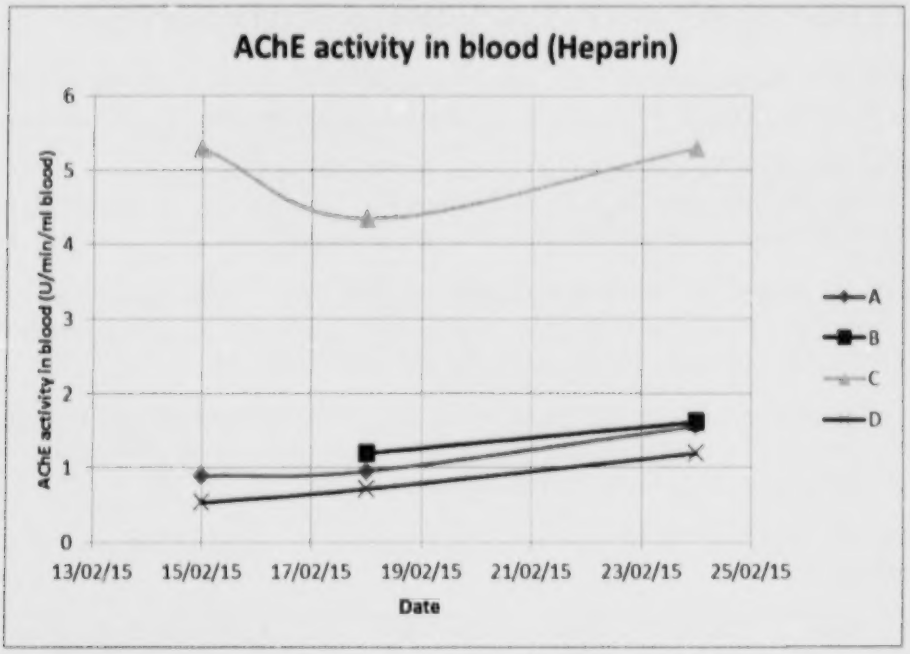
3. Based on those results, the FFM selected 18 samples (listed in the table below) which displayed inhibition of AChE activity, plus one control sample (person E – a member of the laboratory personnel (non-affected) chosen by the Research Institute).

4. The range of normal values for AChE activity was established by the Research Institute based on a study carried out on healthy Syrian persons. No information about the baseline of AChE level in the affected persons prior to the incident was provided to the FFM.

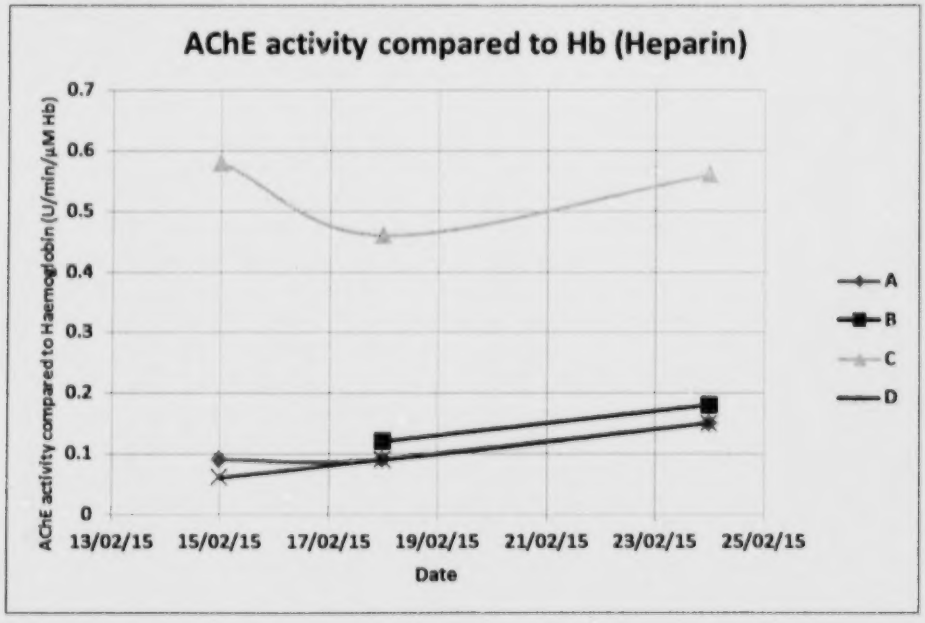
5. The results of analysis of AChE activity of the persons involved in Darayya incident of 15 February 2015:

Date of blood drawing	AntiC	Patient	AchE Activity in the Blood in General (U/min/ml blood) Range of normal value CI 95 % (5.17-9.15)	AchE Activity compare to the Haemoglobin (U/min/µM Hb) Range of normal value CI 95 % (0.60-0.94)
15-Feb-15	H	A	0.89	0.09
15-Feb-15	E		0.83	0.09
18-Feb-15	H		0.95	0.09
24-Feb-15	H		1.55	0.15
24-Feb-15	E		1.61	0.16
18-Feb-15	H	B	1.19	0.12
24-Feb-15	H		1.61	0.18
24-Feb-15	E		1.66	0.18
15-Feb-15	H	C	5.29	0.58
15-Feb-15	E		5.29	0.58
18-Feb-15	H		4.34	0.46
24-Feb-15	H		5.29	0.56
24-Feb-15	E		5.29	0.57
15-Feb-15	H	D	0.53	0.06
15-Feb-15	E		0.48	0.06
18-Feb-15	H		0.71	0.09
24-Feb-15	E		1.19	0.15
24-Feb-15	H		1.19	0.15
18-Feb-15	H	E	6.54	0.69

6. The time frame of changes to the level of AChE activity in the blood of the selected samples related to the Darayya incident 15 February 2015:



7. The time frame of changes to the level of AChE activity compared to haemoglobin for the selected samples related to the Darayya incident 15 February 2015:



8. Based on the previous two charts showing the time frame of the changes to the level of AChE activity, it is apparent that persons D and A were the most affected, while person C was the least affected within the group.

9. These results are consistent with the testimonies of interviewed persons. Person D stated his location to be in the same room as the impact while person A located himself on the same floor as person D. Based on the testimony, person B was in the same building but on a different floor to the impact zone. Interviewee A testified that he was in another building away from the rest of the group and helped affected persons to evacuate. Moreover, some of the interviewees mentioned that persons D and A were the most affected within the group.

10. The FFM sealed and later recovered the blood samples that exhibited inhibition of AChE activity for further analysis in an OPCW designated laboratory in order to identify the presence or absence of any nerve agent adducts. Three different analytical techniques were used by the designated laboratory. In the case of a methylphosphonate (MPA) adduct, two analytical techniques are typically used for analysis. In the event that the amount of the adduct in the blood is low, then only one analytical technique (which is more sensitive) is possible. Additionally, fluoride regeneration did not produce results in several cases – this was mainly due to the low concentration of the adduct in the blood.

11. The following table lists the detailed findings of each analysis conducted by the OPCW designated laboratory together with the result of AChE activity. In most of the cases showing significant inhibition of AChE activity, all three analytical techniques were possible. In some cases of severe inhibition, the designated laboratory was able to use only two techniques for MPA adduct identification. Fluoride regeneration was not possible. In the event of a low inhibition of AChE activity reflected in the low amount of the adduct in the blood, just one technique was possible (LCMS/MS SRM).

12. Corroboration of the ACHE results together with biomedical analysis:

ID	Date of blood drawing	AntiC	Patient	ACHE Activity in the Blood in General (U/min/ml blood)	ACHE Activity compare to the Haemoglogin (U/min/µM Hb)	Findings[9]
AAHO8019NL	15-Feb-15	H	A	0.89	0.09	MPA adduct (2 techniques), Fl regen
AAHO8020NL	15-Feb-15	E		0.83	0.09	MPA adduct (2 techniques), Fl regen

[9] MPA adduct: aged sarin attached to peptide identified with 1 or 2 analytical techniques.
Fl regen = fluoride regeneration – remove unaged adduct and add fluorine to regenerate sarin.

ID	Date of blood drawing	AntiC	Patient	ACHE Activity in the Blood in General (U/min/ml blood)	ACHE Activity compare to the Haemoglogin (U/min/µM Hb)	Findings[9]
AAHO8024NL	18-Feb-15	H		0.95	0.09	MPA adduct (2 techniques), Fl regen
AAHO8025NL	24-Feb-15	H		1.55	0.15	MPA adduct (2 techniques), Fl regen
AAHO8031NL	24-Feb-15	E		1.61	0.16	MPA adduct (1 technique), no Fl regen
AAHO8022NL	18-Feb-15	H	B	1.19	0.12	MPA adduct (2 techniques), Fl regen
AAHO8026NL	24-Feb-15	H		1.61	0.18	MPA adduct (2 techniques), Fl regen
AAHO8028NL	24-Feb-15	E		1.66	0.18	MPA adduct (2 techniques), Fl regen
AAHO8033NL	15-Feb-15	H	C	5.29	0.58	MPA adduct (1 technique), no Fl regen
AAHO8034NL	15-Feb-15	E		5.29	0.58	MPA adduct (1 technique), no Fl regen
AAHO8021NL	18-Feb-15	H		4.34	0.46	MPA adduct (2 techniques), Fl regen
AAHO8029NL	24-Feb-15	H		5.29	0.56	MPA adduct (2 techniques), no Fl regen
AAHO8030NL	24-Feb-15	E		5.29	0.57	MPA adduct (1 technique), no Fl regen
AAHO8017NL	15-Feb-15	H	D	0.53	0.06	MPA adduct (2 techniques), Fl regen

ID	Date of blood drawing	AntiC	Patient	ACHE Activity in the Blood in General (U/min/ml blood)	ACHE Activity compare to the Haemoglogin (U/min/µM Hb)	Findings[9]
AAHO8018NL	15-Feb-15	E		0.48	0.06	MPA adduct (2 techniques), Fl regen
AAHO8023NL	18-Feb-15	H		0.71	0.09	MPA adduct (2 techniques), Fl regen
AAHO8027NL	24-Feb-15	E		1.19	0.15	MPA adduct (2 techniques), Fl regen
AAHO8032NL	24-Feb-15	H		1.19	0.15	MPA adduct (2 techniques), Fl regen
AAHO8035NL	18-Feb-15	H	E	6.54	0.69	No findings

Annex 10

LIST OF REFERENCES

QDOC/INS/SOP/IAU01 – Standard Operating Procedure for Evidence Collection, Documentation, Chain-of-Custody and Preservation during an Investigation of Alleged Use of Chemical Weapons
QDOC/INS/SOP/IAU02 – Standard Operating Procedure Investigation of Alleged Use (IAU) Operations
QDOC/INS/WI/IAU01 – Work Instruction for Command Post Operations during an Investigation of Alleged use of Chemical Weapons
QDOC/INS/WI/IAU03 – Working Instruction for Reconnaissance and Search Operation during an Investigation of Alleged Use
QDOC/INS/WI/IAU04 – Work Instruction for the Collection of Biomedical Samples during an Investigation of Alleged Use
QDOC/INS/WI/IAU05 – Work Instruction for Conducting Interviews of Witnesses during an Investigation of Alleged Use
Manual of Confidentiality Procedure